REQUEST FOR PROPOSAL

FOR INDOOR COMPLEX CABLE / WIRE CONTRACT FOR THE OFFICE OF TELECOMMUNICATIONS MANAGEMENT

File No: K 92214 YT
Solicitation No: 2183102

Proposal Opening Date: NOVEMBER 25, 2003
Proposal Opening Time: 10:00 A.M. (CST)

State of Louisiana
Office of State Purchasing
Tim Kemp, State Purchasing Officer
(225) 342-8021
tkemp@doa.state.la.us

Issue Date: October 2, 2003

REQUEST FOR PROPOSAL

STATE OF LOUISIANA

DIVISION OF ADMINISTRATION

OFFICE OF STATE PURCHASING

BIDS WILL BE PUBLICLY OPENED:

NOV 25, 2003 10:00 AM

PURCHASING AGENCY NO. : 107001

VENDOR NO. :
SOLICITATION : 2183102
FILE NO. :
OPENING DATE : 11/25/03

SEE NO. 8 BELOW. RETURN BID TO
10:00 AM

2183102 11/25/03

OFFICE OF STATE PURCHASING
OFFICE OF STATE PURCHASING
POST OFFICE BOX 94095
BATON ROUGE, LA 70804-9095

BUYER	:	TIM KEMP
BUYER PHONE	:	(225) 342-8021
DATE ISSUED	:	09/30/03
REQ. AGENCY	:	107001

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OFFICE OF STATE PURCHASING

AGENCY REQ. NO.	:	
ISIS REQ. NO.	:	1250685
VENDOR PHONE	:	
FISCAL YEAR	:	04
CLASS/SUBCLASS	:	96218
SCHEDULED BEGIN DATE	:	00/00/00
SCHEDULED END DATE	:	00/00/00
T-NUMBER	:	92214

INDOOR COMPLEX WIRE & CABLE.

FILE # K-92214-YT.

TO BE COMPLETED BY VENDOR

1._____ PLEASE REMOVE FROM THIS COMMODITY CODE.
2._____ DELIVERY WILL BE MADE IN THIS NUMBER OF DAYS AFTER RECEIPT OF ORDER.
3._____ % CASH DISCOUNT FOR PROMPT PAYMENT IF MADE WITHIN THIRTY (30) DAYS. CASH DISCOUNTS FOR LESS THAN 30 DAYS OR LESS THAN 1% WILL BE ACCEPTED, BUT WILL NOT BE CONSIDERED IN DETERMINING AWARDS. ON INDEFINITE QUANTITY TERM CONTRACTS, CASH DISCOUNTS WILL BE ACCEPTED AND TAKEN BUT WILL NOT BE CONSIDERED IN DETERMINING AWARDS.
4._____ BID BOND ATTACHED,_____ CERTIFIED CHECK ATTACHED, _____ OTHER, IF REQUIRED.
5._____ BID REFERENCE NUMBER. (THIS NUMBER WILL APPEAR ON RESULTING ORDER OR CONTRACT).

INSTRUCTIONS TO BIDDERS

1. READ THE ENTIRE BID, INCLUDING ALL TERMS AND CONDITIONS AND SPECIFICATIONS.
2. ALL BID PRICES MUST BE TYPED OR WRITTEN IN INK. ANY CORRECTIONS, ERASURES OR OTHER FORMS OF ALTERATION TO UNIT PRICES SHOULD BE INITIALED BY THE BIDDER.

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3. THIS BID IS TO BE MANUALLY SIGNED IN INK.
4. BID PRICES SHALL INCLUDE DELIVERY OF ALL ITEMS F.O.B. DESTINATION OR AS OTHERWISE PROVIDED. BIDS CONTAINING "PAYMENT IN ADVANCE" OR "C.O.D" REQUIREMENTS MAY BE REJECTED. PAYMENT IS TO BE MADE WITHIN 30 DAYS AFTER RECEIPT OF PROPERLY EXECUTED INVOICE OR DELIVERY, WHICHEVER IS LATER.
5. AMOUNT OF BID BOND REQUIRED: _____N/A_____.
6. AMOUNT OF PERFORMANCE BOND, IF REQUIRED. _____ OR _____0%_____ OF BID.
7. DESIRED DELIVERY: _____SEE DETAILS ELSEWHERE IN DOCUMENT_____
8. TO ASSURE CONSIDERATION OF YOUR BID, ALL BIDS AND ADDENDA SHOULD BE RETURNED IN AN ENVELOPE OR PACKAGE CLEARLY MARKED WITH THE BID OPENING DATE AND THE BID NUMBER, OR SUBMITTED IN THE SPECIAL ENVELOPE IF FURNISHED FOR THAT PURPOSE.
9. BIDS SUBMITTED ARE SUBJECT TO PROVISIONS OF THE LAWS OF THE STATE OF LOUISIANA INCLUDING BUT NOT LIMITED TO L.R.S. 39:1551-1736; PURCHASING RULES AND REGULATIONS; EXECUTIVE ORDERS; STANDARD TERMS AND CONDITIONS; SPECIAL CONDITIONS; AND SPECIFICATIONS LISTED IN THIS SOLICITATION.
10. IMPORTANT: BY SIGNING THE BID, THE BIDDER CERTIFIES COMPLIANCE WITH ALL INSTRUCTIONS TO BIDDERS, TERMS, CONDITIONS AND SPECIFICATIONS, AND FURTHER CERTIFIES THAT THIS BID IS MADE WITHOUT COLLUSION OR FRAUD. THIS BID IS TO BE MANUALLY SIGNED IN INK BY A PERSON AUTHORIZED TO BIND THE VENDOR (SEE NO.30). ALL BID INFORMATION SHALL BE MADE WITH INK OR TYPEWRITTEN.

VENDOR PHONE NUMBER: FAX NUMBER:	TITLE	DATE
SIGNATURE OF AUTHORIZED BIDDER - SEE NO. 30, PAGE 3. (MUST BE SIGNED)	NAME OF BIDDER (TYPED OR PRINTED)	

SPECIAL TERMS & CONDITIONS	REQUEST FOR PROPOSAL	
NUMBER : 2183102 OPEN DATE: 11/25/03 TIME: 10:00 AM T-NUMBER : 92214	BIDDER:	PAGE 2

1 TERMS AND CONDITIONS. THIS SOLICITATION CONTAINS ALL TERMS AND CONDITIONS WITH RESPECT TO THE COMMODITIES HEREIN. ANY VENDOR CONTRACTS, FORMS, TERMS OR OTHER MATERIALS SUBMITTED WITH BID MAY CAUSE BID TO BE REJECTED.

2 VENDOR LIST. THE BIDDER WHO SIGNS THE BID WILL BE DESIGNATED AS PRIME CONTRACTOR ON ANY CONTRACT RESULTING FROM THIS SOLICITATION. IF ADDITIONAL DISTRIBUTOR VENDORS ARE AUTHORIZED TO RECEIVE ORDERS FOR ITEMS CONTAINED IN SAID CONTRACT, THE BIDDER MUST SUBMIT WITH THE BID, A LIST OF THOSE ADDITIONAL AUTHORIZED DISTRIBUTORS INCLUDING THE COMPLETE BUSINESS ADDRESS. THE PRIME CONTRACTOR WILL BE RESPONSIBLE FOR THE ACTIONS OF ANY DISTRIBUTOR VENDORS LISTED.

3 COOPERATIVE PURCHASE. POLITICAL SUBDIVISIONS OF THE STATE AND QUASI STATE AGENCIES MAY BE PERMITTED TO PURCHASE FROM CONTRACTS MADE BY THE OFFICE OF STATE PURCHASING. THE BIDDER MAY, AT ITS OPTION, AMEND THIS BID SO THAT ANY CONTRACT AWARDED WILL NOT APPLY TO POLITICAL SUBDIVISIONS OR QUASI AGENCIES.

__________ BIDDER HEREBY AMENDS HIS BID SO THAT ANY CONTRACT AWARDED WILL NOT APPLY TO QUASI STATE AGENCIES OR OTHER POLITICAL SUBDIVISIONS OF THE STATE.

FAILURE TO MARK THE ABOVE WILL CONSTITUTE A WAIVER BY BIDDER OF THE ABOVE OPTION.

4 CONTRACT PERFORMANCE EVALUATION
IN AN EFFORT TO IMPROVE OUR CONTRACTS TO MEET THE NEEDS OF THE AGENCIES WE SERVE, THE CONTRACTOR'S PERFORMANCE WILL BE MONITORED. AGENCIES' FEEDBACK WILL BE REQUESTED REGARDING CUSTOMER SERVICE, DELIVERY, PRODUCT QUALITY, BILLING, OVERALL EFFECTIVENESS OF THE CONTRACT, AND ANY NEEDED CHANGES. THEIR RESPONSES WILL BE CONSIDERED IN DETERMINING OUR OPTIONS FOR RENEWALS OR REVISIONS AND REBIDDING. TO VIEW THE CONTENT OF THE CONTRACT PERFORMANCE EVALUATION FORM, GO TO WWW.STATE.LA.US/OSP/ONLINEFORMS/FORMLISTING.HTM OR CALL FOR A COPY.

AGENCY REPORTS OF DEFICIENT PERFORMANCE WILL BE APPROPRIATELY ADDRESSED DURING THE CONTRACT PERIOD.

<<<<<<<<<<<<<<<<<<<<<<<<<<<>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
OTM# 0307180
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**************** PUBLIC RECORDS REQUEST **********************

PROPOSALS MAY BE REVIEWED BY ANY PERSON AFTER THE "INTENT TO AWARD" OR "AWARD NOTIFICATION" LETTER HAS BEEN ISSUED BY SCHEDULING AN APPOINTMENT WITH THE OFFICE OF STATE PURCHASING.

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1.0 SCOPE

1.1 DESCRIPTION OF EQUIPMENT, SYSTEM, OR SERVICE TO BE PROVIDED

The State of Louisiana shall establish two contracts, one for indoor wire and cable and one for outdoor wire and cable. This bid document solicits bid responses for furnishing, installing, and repairing **INDOOR** communications infrastructure, cable, and wire for state leased and owned facilities by State-defined region and as described herein. This contract shall be awarded by region. Any contract resulting from this bid document shall be referred to as the Indoor Complex Cable/Wire Contract.

The State reserves the right to use this contract for procurement of labor/installation or materials separately or jointly. However, the State shall not purchase materials from one contract resulting from this bid document and labor from another contract resulting from this bid document.

1.2 NON-EXCLUSIVE CONTRACT

This contract is non-exclusive and shall not in any way preclude the State from entering into similar contracts and/or arrangements with other vendors or from acquiring similar, equal or like goods and/or services from other entities or sources.

The State reserves the right to make multiple awards of this contract to up to three (3) bid responses in a region that meet or exceed all of the mandatory requirements in this bid document and that receive the highest ranking in point scores in a region. Likewise, the State reserves the right to issue written orders to any one of the Contractors for work to be performed under the contract.

1.3 GUARANTEE OF QUANTITIES OR CONTRACT USE

Quantities that may be used in this bid document are for evaluation or informational purposes only. The State does not guarantee that these quantities shall be purchased from the contract.

2.0 BID RESPONSE PREPARATION/SUBMITTAL INSTRUCTIONS

2.1 DEFINITIONS

BICSI - Building Industry Consulting Service International

Bid Document - for the purposes of this document, is defined as the document used to solicit bids or proposals and may mean either an Invitation to Bid (ITB) or a Request for Proposals (RFP).

Bid Response - for purposes of this document, is defined as the document submitted by a vendor in response to an ITB or an RFP.

Bidder - for purposes of this document, is defined as a person who submits a bid in response to an ITB or a proposal in response to an RFP.

Cable/Wire System or Wiring - shall mean a communications cabling and wiring installation for the purpose of intra/inter-building information distribution by connecting communications devices such as telephones, data terminals, etc. allowing the users to communicate with one another. It represents a transmission media consisting of a number of systems: copper and fiber optic cable for service entry, feeders/risers, station distribution wiring, station location wiring, equipment wiring, and cross/inter-connection arrangements.

CAT-3 – means ANSI/TIA/EIA-568-B.2 Category-3 compliant.

CAT-5E – means ANSI/TIA/EIA-568-B.2 Category-5E compliant.

CAT-6 - means ANSI/TIA/EIA-568-B.2-1 Category-6 “component” compliant.

Contractor - means any person having a contract with a governmental body.

Critical Cabling Problem - a problem affecting a trunk or backbone cabling problem causing a large number of users to be without service, or a problem affecting critical circuits such as at hospitals or prisons.

Equal/Equivalent - shall be taken in its general sense and shall not mean identical. The specification mentioning a specific brand or model does so for the sole purpose of establishing minimum requirements or level of quality, standards of performance, and design required and is in no way intended to prohibit the bidding of any manufacturer’s item of equal material properties and performance. See Section 3.2.1.1.

Nominal - means not necessarily precise; rather, within a tolerance of the specified values.

Non-Critical Cabling Problem – a problem affecting a single run or station causing a small number of users to be without service, and not affecting equipment serving critical system functions and/or a large number of users.

OTM – the Office of Telecommunications Management

OTM Project Manager - may mean an employee of OTM who has been assigned as Project Manager to a specific project or an OTM-designated representative; i.e., an employee of another state agency other than OTM.

Owner - shall mean the State of Louisiana.

Service Offering – for purposes of this bid document, is defined as the bidder's past and present performance (including any knowledge OTM may have regarding the bidder's performance on State projects/contracts), the bidder's experience and qualifications, as well as the bidder's proposed solution to the State's needs and stated desirable features/functions, as applicable.

Shall - denotes a mandatory requirement, per Louisiana Revised Statute 39:1556, Paragraph 21.

2.2 CALENDAR OF EVENTS

Release Bids:	October 2, 2003
Deadline to Receive Inquiries:	October 30, 2003
Deadline to Answer Inquiries:	November 10, 2003
Bid Opening:	November 25, 2003 – 10:00 AM

2.3 BID DOCUMENT INQUIRIES

All written inquiries delivered to the address below and received by the deadline in the Calendar of Events shall be answered in writing.

Nancy Jordan
Administrative Director
Office of Telecommunications Management
P. O. Box 94280, Capitol Station
Baton Rouge, LA 70804-9280
FAX # (225) 342-7984

A copy of such inquiries should be delivered to:

Tim Kemp
State Purchasing Officer
State Purchasing-Division of Administration
P. O. Box 94095, Capitol Station
Baton Rouge, LA 70804-9095
FAX # (225) 342-8688

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2.5 BLANK

2.6 NUMBER OF COPIES SUBMITTED

Each bidder shall submit one original and should submit two copies of the bid response.

2.7 DELIVERY OF BID RESPONSES

This bid document is available in electronic form at the Office of State Purchasing's LaPAC website http://wwwsrch2.doa.state.la.us/osp/lapac/pubmain.asp. It is available in PDF format or in printed form by submitting a written request to the bid document Contracting Officer with the Office of State Purchasing.

All bid responses shall be received by the Office of State Purchasing **no later than the date and time shown in the Calendar of Events.**

Important – Clearly mark outside of envelope, box or package with the following information and format:

- Bid Document Name: Complex Indoor Cable/Wire
- File Number: K-92214-YT, Solicitation #2183102
- Bid Document Opening Date: November 25, 2003 – 10:00 AM
- Contractor's License Number: _____

Bidders are hereby advised that the U.S. Postal Services does not make deliveries to the Office of State Purchasing's physical location.

Bid responses may be mailed through the U.S. Postal Service to:

Office of State Purchasing
P. O. Box 94095
Baton Rouge, LA 70804-9095

Bid responses may be delivered by hand or courier service to:

Office of State Purchasing
1201 North 3rd Street
Suite 2-160
Baton Rouge, LA 70802

Bidder is solely responsible for ensuring that its courier service provider makes inside deliveries to the Office of State Purchasing's physical location. The Office of State Purchasing is not responsible for any delays caused by the bidder's chosen means of bid response delivery.

Bidder is solely responsible for the timely delivery of its bid response. Failure to meet the bid opening date and time shall result in rejection of the bid response.

Publicizing Awards. In accordance with L.A.C. 34:I; 535, unsuccessful bidders shall be notified of the award provided that they submit a self-addressed stamped envelope requesting this information with their bid.

2.8 BLANK

2.9 JOINT BID RESPONSES

A joint bid response (two or more bidders quoting jointly on one bid response) may be submitted, and each participating bidder shall sign the joint bid response. If the contract is awarded to joint bidders, there shall be one contract issued to the joint bidders. Each joint Contractor shall agree to take necessary action to ensure that all the obligations of the contract are met. Specifically, in the event the State determines that one or more of the joint Contractors has not met the obligations under the contract, the other joint Contractor shall take necessary actions to ensure that the obligations of the contract are met at no additional cost to the State and with the understanding that if a replacement Contractor is utilized, the replacement Contractor shall comply with all terms and conditions of the bid document and contract. Further, in the event the State requires a performance guarantee, the joint bidders shall submit a single performance guarantee issued in the names of all joint bidders. In the event any of the joint Contractors do not meet the performance requirements, the State shall have the option to make claim up to the limit of the guarantee. The joint Contractors shall also designate, in writing, one Contractor that shall function as the single point of contact concerning all matters relating to the contract. The State assumes no responsibility or obligation for the division of orders or purchases among the joint Contractors.

2.10 CONFIDENTIALITY

Only information which is in the nature of legitimate trade secrets or non-published financial data may be deemed proprietary or confidential. Any material within a bid response identified as such shall be clearly marked in the bid response and shall be handled in accordance with the Louisiana Public Records Act, R.S. 44:1-44 and applicable rules and regulations. Any bid response marked as confidential or proprietary in its entirety may be rejected without further consideration or recourse.

However, the State reserves the right to make any bid response, including proprietary information contained therein, available to OTM, the Office of State Purchasing personnel, the Office of the Governor, or other state agencies or

organizations for the sole purpose of assisting the State in its evaluation of the bid response. The State shall require said individuals to protect the confidentiality of any specifically identified proprietary information or privileged business information obtained as a result of their participation in these evaluations.

2.11 BID OPENING

Bid responses shall be opened publicly at the Office of State Purchasing at the date and time indicated in Calendar of Events, Section 2.2. Only names of the bidders submitting bid responses shall be read.

3.0 BID DOCUMENT REQUIREMENTS

3.1 BIDDER REQUIREMENTS

A. COMPLIANCE WITH CIVIL RIGHTS LAWS

By submitting and signing this solicitation, the bidder agrees to abide by the requirements of the following as applicable: Title VI and Title VII of the Civil Rights Act of 1964, as amended by the equal opportunity Act of 1972, Federal Executive Order 11246, the Federal Rehabilitation Act of 1973, as amended, the Vietnam Era Veteran's Readjustment Assistance Act of 1974, Title IX of the Education Amendments Act of 1972, the Age Act of 1975, and bidder agrees to abide by the requirements of the Americans with Disabilities Act of 1990. Bidder agrees not to discriminate in its employment practices, and shall render services under any contract entered into as a result of this solicitation, without regard to race, color, religion, sex, national origin, veteran status, political affiliation, or disabilities. Any act of discrimination committed by bidder, or failure to comply with these statutory obligations when applicable, shall be grounds for termination of any contract entered into as a result of this solicitation.

B. CERTIFICATION OF NO SUSPENSION OR DEBARMENT

By signing and submitting any bid for $100,000 or more, the bidder certifies that their company, any subcontractors, or principals are not suspended or debarred by the General Services Administration (GSA) in accordance with the requirements in OMB Circular A-133.

A list of parties who have been suspended or debarred can be viewed via the internet at www.arnet.gov/epls.

3.1.1 BIDDER QUALIFICATIONS

It is highly desirable that the bidder has installed and satisfactorily completed at least one (1) wire/cable system prior to bid opening in each of the following four (4) installation categories:

(1) Indoor wire UTP
(2) Fiber Optic cable
(3) Coaxial cable
(4) Indoor conduit

A bidder may reference a completed project more than once to qualify for multiple categories.

The bidder shall supply at least one (1) reference in each installation category listed above. The State desires that the bidder has been the responsible party/prime contractor on the references. The State desires that the bidder submit references other than any associated with the State of Louisiana. Bidder should supply reference information on the form in Section 7.

Bidders shall provide information on all references who shall be contacted. If any of the references cannot be contacted after repeated attempts, the bidder shall be contacted for assistance or to provide another reference to the State for review.

The State desires that the bidder has been in the business of indoor communications cabling field being bid for an extended period of time. The bidder should complete the form provided in Section 7.

The State desires references in the above categories which are of similar size, type, scope, coverage area, and complexity to this bid document. The State shall contact the references to determine the bidder's qualifications, experience, past and present performance, and ability to meet contract obligations. Information received from the references shall be evaluated.

If the bidder does not provide the documentation with the bid response, OTM shall request the documentation after the bid response is received. If the bidder cannot provide the documentation by the deadline requested by OTM, the bid response shall be rejected.

Bidders are encouraged to supply relevant information concerning their qualifications to perform work under this contract and any value added benefits of their service offerings. This information should be provided in narrative form in Section 7 with the bid response.

3.1.1.1 SUBCONTRACTORS

Subcontractors may be utilized by the Contractor. It is the Contractor's responsibility to insure that his subcontractors are industry qualified/certified to perform the tasks assigned. See Section 6.3.2 for insurance requirements.

3.1.2 BIDDER SERVICE OFFERING

The State desires the best service offering possible.

The State desires the best quality control possible. The bidder should provide a narrative of his existing quality control system and procedures on the appropriate form in Section 7. The State desires the quality of installations be consistently high on every project and within a given project.

The State desires that the bidder's company has the depth and flexibility to handle varying workloads. The quantity of State work varies greatly throughout the year. The bidder should provide a narrative of his company's ability to handle varying workloads on the appropriate form in Section 7. The bidders are encouraged to provide examples where they have accomplished this feat in the past for other clients and end users.

3.2 TECHNICAL REQUIREMENTS

At the State's request, the bidder shall supply manufacturer's technical literature for all materials supplied in this contract for evaluation purposes. The units in this contract which require multiple parts shall require multiple sheets of technical literature for all parts of the unit. All technical literature should be labeled as to which contract unit the literature corresponds and should be cataloged in the same sequence as the units in the contract.

If the bidder cannot provide the documentation by the State's stipulated deadline, the bid response shall be rejected.

3.2.1 GENERAL REQUIREMENTS

The following requirements and specifications are mandatory and define the minimum acceptable physical and performance requirements of the material, installation/labor, and services to be provided by the Contractor.

The successful bidder (Contractor) shall be the sole point of contact for all project communications. The Contractor shall designate one of his employees as point of contact for all project communications. The designee shall possess and exhibit a thorough knowledge of telecommunications cabling infrastructures, including inside plant facilities, and have a minimum of two years of documentable design experience.

All cable and materials shall be new. The use of new undamaged materials left over from other jobs is permissible. All materials utilized shall be fully covered by manufacturer's warranty.

All wiring shall be installed to maximize the safety, maintainability, and performance effectiveness of maintenance personnel and minimize the demands upon skills, training, and manpower.

Splices/terminations shall be placed and supported with convenient accessibility so as to maximize the efficiency and ease with which it can be maintained.

All cables in equipment/wiring rooms shall be provided with ten (10) ft. long maintenance slack, when required, to facilitate future modifications. All cables in enclosures, such as pull boxes, shall be provided with maintenance slack.

For all materials and labor installed from this contract, the Contractor shall have his (and all subcontractors') installation crews working on State projects during normal business hours. For the purpose of this contract, the State considers normal business hours as 8:00 AM to 5:00 PM Monday through Friday. If a Contractor chooses to work outside of normal business hours (or needs to due to falling behind schedule), the Contractor shall obtain the agency's and OTM's approvals prior to commencing this work. If not specifically requested by the State but the Contractor chooses to work after normal business hours, this work shall be done at no extra cost to the State.

3.2.1.1 ACCEPTABLE PRODUCTS

Acceptable products are identified in Section 3.2.3. Only products designated by OTM as acceptable shall be considered for award. The bidder shall submit a request for OTM to consider products he desires to add to the OTM-designated "acceptable" category. This request shall be submitted in writing, during the inquiry period specified in Section 2.2, accompanied with manufacturer's technical literature labeled with appropriate line items. OTM shall reply to such requests in response to vendor inquiries and any products deemed "acceptable" by OTM shall be added to the bid document through an addendum.

Requests for additions or substitutions after award may be addressed in accordance with Section 6.2.10, Contract Modifications.

At any time during the term of the contract it is determined that the Contractor installed a products that had not been designated as "acceptable," the Contractor shall bear all costs (materials and labor) to replace the non-acceptable product.

3.2.1.2 BRAND NAME SPECIFIC PRODUCTS

Name brand specific items are identified in Sections 3.2.3.2.9, 3.2.3.5.1, 3.2.3.5.4, 3.2.3.5.5, 3.2.3.5.6, 3.2.3.5.8. and 3.2.3.5.10. Only the specific name brands and part numbers listed for these products shall be acceptable.

The products for these items have physical and electrical properties that may not be functional with other brands. OTM has therefore designated them as Brand Name Specific to provide for a standard infrastructure and ensure interoperability between multiple vendors.

Exceptions to these specific products may be agreed upon in writing between the Contractor(s) and OTM Project Manager on a job specific basis for large existing installations, and when in the best interest of the State.

Requests for substitutions due to manufacturer discontinuance after award may be addressed in accordance with Section 6.2.10, Contract Modifications. All other requests shall be denied.

At any time during the term of the contract it is determined that the Contractor installed alternate products for those that have been designated as Name Brand Specific without prior written approval, the Contractor shall bear all costs (materials and labor) to replace the non-acceptable product.

3.2.2 APPLICABLE DOCUMENTS

The following current issues of specifications, standards, and code requirements shall apply to the products and work specified herein:

1. ANSI/TIA/EIA Standards for Commercial Buildings

2. BOCS and Avaya Plant Standards

3. Building Industry Consulting Services International (BICSI)
   Telecommunications Distribution Methods Manual (TDMM)
   Customer Owned Outside Plant (CO-OSP) Design Manual
   Telecommunications Cabling Installation Manual (TCIM)

4. FCC Part 68

5. ANSI/TIA/EIA Telecommunications Building Wiring Standards Parts 568B, 569, 570, 606, 607, and TSBs

6. National Electrical Code (NEC) & NFPA 70

7. State and Local Codes

8. Occupational Safety and Health Act (OSHA)

9. Underwriter's Laboratories (UL)

10. Americans with Disabilities Act (ADA)

11. Unit Descriptions referenced herein

In the event of ambiguities among the above documents, the more stringent shall prevail according to OTM project management interpretation.

3.2.3 UNIT DESCRIPTIONS/SPECIFICATIONS

3.2.3.1 INFRASTRUCTURE / PATHWAY UNITS

Acceptable products are listed for non-labor items.

3.2.3.1.1 CABLE TAG (Lines 1001-1002)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
1-1/2" x 1" Cable Tag	Panduit No. MP150-C

Cable tag units shall consist of the resources required to furnish/install ordered quantities (each) of tags as required at project sites and indicated in the drawing standards and/or specifications herein applying to these units.

Tags shall be pressure sensitive, UV stabilized, and have 1-1/2" H x 1" W nominal dimensions with liner paper back suitable for adhesive, holder, or tie mounting. Each shall be UV Poly attachment options of nailing, screwing, or tying.

3.2.3.1.2 CONDUIT (Lines 1003-1038)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
¾" EMT Conduit	Allied No. ¾ EMT
1" EMT Conduit	Allied No. 1 EMT
1-½" Conduit	Allied No. 1-½ EMT
2" EMT Conduit	Allied No. 2-EMT
4" EMT Conduit	Allied No. 4-EMT

2” EMT 90° Elbow Normal Radius	Allied No. 2-90D-24R-EMT-ELL
4” EMT 90° Elbow Normal Radius	Allied No. 4-90D-24R-EMT-ELL
2” EMT 45° Elbow Normal Radius	Allied No. 2-45D-24R-EMT-ELL
4” EMT 45° Elbow Normal Radius	Allied No. 4-45D-24R-EMT-ELL
¾” RGS Conduit	Allied No. ¾ GALV
1” RGS Conduit	Allied No. 1 GALV
1-½” RGS Conduit	Allied No. 1-½ GALV
2” RGS Conduit	Allied No. 2 GALV
4” RGS Conduit	Allied No. 4 GALV
2” RGS 90° Elbow Normal Radius	Allied No. 2-90D-24R-GALV-ELL
4” RGS 90° Elbow Normal Radius	Allied No. 4-90D-24R-GALV-ELL
2” RGS 45° Elbow Normal Radius	Allied No. 2-45D-24R-GALV-ELL
4” RGS 45° Elbow Normal Radius	Allied No. 4-45D-24R-GALV-ELL

Conduit units shall consist of the required resources to furnish/install ordered quantities (10-foot lengths) of various types and applications of nipples/conduit and/or fittings, as required at project sites and indicated in the drawing standards and specifications herein applying to these units.

Electrical Metal Tubing (EMT) shall comply with ANSI C80.3 and UL 797. Use Type 1 tubing outlet bodies and other fittings for rain-tight connections on outdoor applications, and Type 3 for indoor service.

Rigid Galvanized Steel (RGS) shall typically be for outdoors above ground and floor/wall penetration applications. RGS shall be rigid galvanized steel, zinc coated (both indoor and outdoor walls), threaded type conforming to ANSI C80.1 and UL 6. RGS outlet bodies (LB’s, 90’s, etc.) and other fittings shall be cast malleable iron, galvanized, or cadmium plated with threaded ends, removable covers (either cast or galvanized steel) and corrosion-resistant screws.

All lengths of conduit shall be supplied with a bell or coupling end, as required. All RGS and EMT nipple/conduit terminations at boxes/enclosures, man/handholes, applicable penetrations, stubs, etc. shall be fitted with locknuts and bushings.

This unit shall include, but not be limited to, all bushings, clamps, I-beam clamps, threaded rod, uni-strut, couplings, end-caps/plugs, locknuts, bends, etc. and any other necessary hardware to make for a complete, closed, continuous, conduit run from end to end. Conduit supported from structural members shall be securely clamped in place. All conduit runs shall not exceed the number of bends and bend radii specified in the herein-referenced codes and standards.

All normal radius bends shall be two (2) foot radius and all long radius bends shall be six (6) foot radius.

All conduit sizes below 2” outside diameter shall be machine bent on site by contractor.

Pull lines (included) shall be installed in all empty and filled conduit newly installed by the Contractor, unless otherwise designated by the OTM Project Manager. Pull string, as specified herein, shall be installed in conduits ¾” to 1-½” in diameter, and pull rope or mule tape in conduits 2" to 4".

3.2.3.1.3 FLEXIBLE CONDUIT (Lines 1039-1066)

Acceptable product names/part numbers:

Description	Manufacturers
Flexible Metal Conduit (non-jacketed)	AllFlex, AFC, Electri-Flex
Liquid Tight Flexible Metal Conduit	AllFlex, AFC, Electri-Flex
Liquid Tight Flexible Non-Metallic Conduit	AllFlex, AFC, Electri-Flex

Flexible conduit units shall consist of the resources required to furnish/install ordered quantities (5-foot lengths) of various types of flexible metallic and non-metallic conduit, as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

Flexible metal conduit shall be "greenfield" type for inside use, and be formed from continuous length, non-jacketed, spirally wound, interlocked, zinc-coated strip metal. Terminal fittings shall be supplied on each end as a part of this unit. The flex conduit and fittings shall comply with UL 1.

Liquid Tight Flex Conduit for indoor/outdoor use, shall be formed from continuous length, spirally wound, interlocked, zinc-coated strip metal with weather proof plastic outer sheath. Terminal fittings shall be supplied on each end as a part of this unit. The flex conduit and fittings shall comply with UL 360.

Liquid Tight Flexible Non-Metallic Conduit for indoor/outdoor use, shall be formed from continuous length, with helically wound Type B weather proof construction. Terminal fittings shall be supplied on each end as part of this unit. The flex conduit and fittings shall comply with UL 1660.

All lengths of flexible conduit shall be supplied with connectors and bushings, or couplings, (as part of this unit) on each end as required.

3.2.3.1.4 INNERDUCT (Lines 1067-1084)

Acceptable product names/part numbers:

Description	Carlon No.	Pyramid No.
Corrugated Riser ¾"	DE4X1C	RIS100
Corrugated Riser 1"	DF4X1C	RIS100
Corrugated Riser 1¼"	DG4X1C	RIS125
Corrugated Riser ¾"	CF4X1C	RIS100
Corrugated Plenum 1"	CE4X1C	PLM100
Corrugated Plenum 1¼"	CG4X1C	PLM125
Corrugated Riser ¾"	AE4X1C	RIS100
Corrugated Outdoor 1"	AF4X1A	4404-04T
Corrugated Outdoor 1¼"	AW4X1A	4404-05T
Innerduct Coupling 1"	P100	P100
Innerduct Coupling 1¼"	P125	P125

Innerduct units shall consist of the resources to furnish and install flexible plastic or multi-cellular fabric duct in conduit, ceiling space, or riser shafts as required by a project.

Plastic type innerduct shall be corrugated flexible polymer duct as required. Sequential footage marks shall be printed on the outside surface of all inner ducts and pull ropes or tapes pre-inserted.

All installed innerduct shall be contiguous from end-to-end. All ends shall be terminated and sealed after installation with appropriately designed grommet/plug devices, male terminal adapters, and/or sealing compound, as required, for cable or empty innerduct (with pull line) applications.

The various categories of installation labor for innerduct are defined as: pulled in cable tray, raceway; or pulled in conduit (not part of this unit), ceilings, or floors; pulled and strapped to structures (straps included in increments of 2', nominal) as in riser applications.

Innerduct Couplings shall be external threaded aluminum or clamshell type, designed to draw/hold each innerduct end near the center of the coupler. Couplings shall only be used to extend existing installed innerduct(s), and when approved by the OTM Project Manager.

3.2.3.1.5 PULL LINE (Lines 1085-1088)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
¼" Polypropylene Rope	Crowe No. 05103
Polypropylene Pull String	Greenlee No. 430

Pull line units shall consist of the resources required to furnish/install ordered footage of various types of line pulled in conduit (not included in this unit) as required at project sites and indicated in the drawing standards and/or specifications herein applying to these units.

Pull rope shall be made of non-degradable material such as polypropylene having a nominal diameter of one-fourth inch (¼") with 500 pound tensile strength.

Pull string shall be made of non-degradable cord/twine material such as polypropylene having a nominal diameter of one-eighth (1/8) inch with 200 pound tensile strength.

All pull lines shall be installed with a minimum five (5) feet of excess on each end and tagged with destination information for identification purposes as a part of this unit.

3.2.3.1.6 ENCLOSURE (Lines 1089-1120)

Acceptable product names/part numbers:

Description	B-Line No.
NEMA 1 Enclosure 6"x 6"x 4"	664SC
NEMA 1 Enclosure 8"x 8"x 6"	886SC
NEMA 1 Enclosure 8"x 8"x 6"	12126SC
NEMA 1 Enclosure 12"x 12"x 8"	12128SC-NK
NEMA 1 Enclosure 18"x 18"x 8"	18188SC-NK
NEMA 1 Enclosure 24"x 24"x 10"	242410SC-NK
NEMA 1 Enclosure 36"x 36"x 12"	363612SC-NK
NEMA 12 Enclosure 6"x 6"x 4"	664-12SC
NEMA 12 Enclosure 8"x 8"x 6"	1086-12SC
NEMA 12 Enclosure 12"x 12"x 6"	14128-12CHC
NEMA 12 Enclosure 18"x 18"x 8"	20168-12
NEMA 12 Enclosure 24"x 24"x 10"	242410-12
NEMA 12 Enclosure 36"x 36"x 12"	363612-12
NEMA 12 Trough Enclosure 8"x 8"x 24"	8824-12WT
NEMA 12 Trough Enclosure 8"x 8"x 36"	8836-12WT

Enclosure units shall consist of the required resources to furnish/install ordered quantities (each) of various types of enclosures, as required at project sites and as indicated in the drawing standards and/or specifications provided herein applying to these units.

Enclosures shall be UL listed and conform to NEMA specifications, as applicable.

NEMA 1 metallic enclosures shall be utilized for indoor use. Enclosures shall be boxes fabricated from painted, galvanized sheet steel with screw-on covers, welded seams, and plated steel bolts, nuts, screws, and washers.

NEMA 12 metallic enclosures shall be utilized for indoor use and suitable for outdoor applications. Enclosures shall be boxes fabricated from painted, galvanized sheet steel with screw-on or hinged covers, welded seams, and stainless steel bolts, nuts, screws, and washers.

All enclosures shall be mounted securely to beams, columns, walls, or other structural members as applicable. Enclosures shall not be supported by conduit or cable only. All indoor plant cable and/or conduit enclosure entries shall be bushed/grommeted (as part of this unit) to prevent cable strain.

All outdoor plant cable and/or conduit enclosure entries shall be bushed, grommeted and sealed (as part of this unit) to prevent cable strain and box leakage.

3.2.3.1.7 CORE, SLEEVE AND FIRE/NON-FIRE STOP (Lines 1121-1168)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
1” Galvanized Nipple	Blackburn No. N3xBB
2” Galvanized Nipple	Blackburn No. N6xBB
4” Galvanized Nipple	Blackburn No. N9xBB
1” Plastic Bushing	Steel City No. BU-503
2” Plastic Bushing	Steel City No. BU-506
4” Plastic Bushing	Steel City No. BU-510
1” Locknut	Steel City No. LN-103
2” Locknut	Steel City No. LN-106
4” Locknut	Steel City No. LN-110
Firestop Caulk	STI No. SSS100
Firestop Mineral Wool	STI No. SSAMW
Non-Fire Sealing Putty	Panduit No. DS1

Core, sleeve and non/FIRE STOP units shall consist of the resources required to furnish/install ordered thickness (per inch) of bore or core type drills through pathway ceilings, floors, partitions, roofs, walls, etc., with or without fire seals as applicable, and as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

Penetration conduit/nipples and bushings shall be included in this unit. When required, these components shall be Rigid Galvanized Steel (RGS) metal sleeves

and bushings of inside diameter and length as required by project design and/or the State Fire Marshal.

All FIRESTOP systems shall be installed as per the manufacturer's instructions and in accordance with NFPA-70, UL and Life Safety Codes. The FIRESTOP system shall be installed by installers who have been manufacturer-trained in their FIRESTOP systems. A copy of the UL FIRESTOP system shall be given to the building owner and to OTM on each project.

Penetration seals shall be included in this unit. Seal materials and methods shall be as required by the State Fire Marshal in accordance with the type of UL fire rated system(s) that apply at any project site.

Penetrations shall be either bore drilled or core drilled holes, as required. Bust/poke-throughs with hand tools shall not be used to penetrate and shall not be accepted or approved for payment unless specifically authorized in advance and in writing by the OTM Project Manager. All penetration work shall be neat and debris shall be cleaned up after completion. See drawing #T-2.1.

3.2.3.1.8 DROP POLE (Lines 1169-1174)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
10' Drop Pole	Hubbell No. HSP10ABx and HPWATB
12' Drop Pole	Hubbell No. HSP12ABx and HPWATB
15' Drop Pole	Hubbell No. HSP15ABx and HPWATB

Drop poles shall be floor standing vertical raceways constructed of extruded aluminum with satin anodized finish or painted steel and UL Listing. Poles shall be 2 1/2" x 2 1/2", nominal, with rounded edges and black plastic or rubber covered base. Other features and requirements shall include:

Poles shall have two (2) channels for separate power and communications capabilities.

Poles shall be equipped with a replaceable entrance cover and two (2) outlet openings, one (1) for each channel. Outlet openings used for cable breakout shall be bushed/grommeted.

Poles shall be equipped with an adjustable T-bar for mounting in the middle of ceiling panels, as part of this unit.

Poles shall be installed plumb, with sides parallel to walls or partitions, and stationary.

3.2.3.1.9 FLOOR CABLE DUCT (Lines 1175-1178)

Acceptable product names/part numbers:

Description	Hubbell No.	Wiremold No.
½" Floor Cable Duct	HPWFT2BKxx	xx1200-5
1" Floor Cable Duct	HPWFT4BKxx	xx1600-5

Floor cable duct shall be floor surface mount raceways constructed of high-impact, fire-resistant, UL Listed, rigid natural PVC type compounds (or metallic if required). Duct finish shall be matted and have a natural color.

Ducts installed on floors shall be low-profile and either modified with sloping sides or be pancake shaped in order to minimize tripping hazards.

Ducts shall be installed parallel and perpendicular to surrounding architectural lines. Diagonal runs or angle runs other than 90^{o} shall not be acceptable unless pre-approved in writing by OTM.

3.2.3.1.10 SURFACE RACEWAY (Lines 1179-1186)

Acceptable product names/part numbers:

Description	Hubbel No.	Panduit No.
3/4" Raceway	MT3BC7	LD3xxy
1 1/2"	MT7BC7	LD10xxy
2"	MT8BC7	T45Bxxy + T45Cxxy
4"	MT5BC5	T70Bxxy + T70Cxxy + T70Dxxy

Raceway units shall consist of the resources required to furnish/install ordered lengths of various types of surface raceway, as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

Raceway shall be wall surface mount constructed of high-impact, fire-resistant, UL Listed, rigid natural PVC type compounds (or metallic if required in writing by OTM Project Manager). Raceway finish shall be matted and have natural colors: Ivory, White, Brown, or Almond.

Raceway shall be secured to the surface every three (3) feet, nominal, with anchor-type fasteners appropriate for the type of surface construction to which it is being mounted. All fasteners shall be made-up tight with extra fasteners provided at corners, turns, and terminations so that end-to-end runs are snug to the mounting surface without twists, warps, or movement. The use of adhesive tape or adhesive-backed raceway shall not be allowed without prior written approval of the OTM Project Manager.

Raceway shall be installed parallel and perpendicular to surrounding architectural lines. Diagonal runs or angle runs other than 90° shall not be acceptable unless pre-approved in writing by the OTM Project Manager.

Raceway four (4) inches in width, nominal, shall have snap-in/out barriers rendering a flexibility of one (1), two (2), or three (3) channels as required.

Raceway shall be equipped with snap-on/off covers. The following accessories shall be provided as a part of this unit in order to provide a complete, enclosed and functional raceway system at no additional cost to the State.

1. Couplings or joint/splice covers
2. Elbows (flat, internal, and/or external)
3. Panel connectors
4. Tee connectors
5. Wire retaining clips
6. End caps
7. Reducers
8. Drop Ceiling Adapters

All sizes and types of fittings including flat, inside and outside elbows shall be ANSI/TIA/EIA compliant with respect to UTP bend radius requirements.

3.2.3.1.11 WIRING DUCT (Lines 1187-1190)

Acceptable product names/part numbers:

Description	Panduit No.	Tyton No.
2” Wiring Duct	E2X2LG6 + C2LG6	SL2X2G & TC2G
4” WIring Duct	E4X4LG6 + C4LG6	SL4X4G & TC4G

Wiring duct units shall consist of the resources required to furnish/install ordered lengths of various types of surface raceway, as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

Wiring duct shall be backboard or frame/rack mount raceways constructed of fire-resistant, UL Listed, plastic type compounds with slotted sides. Other features and requirements are:

Duct shall be equipped with snap-on/off covers.

Duct sizes shall be 2" x 2" or 4" x 4", nominal, as applicable.

Duct shall be gray in color.

Ducts shall be secured to the surface every two (2) feet, nominal, with threaded fasteners appropriate for the type of surface construction being mounted-to. All fasteners shall be made-up tight with extra fasteners provided at corners, turns, and terminations so that end-to-end runs are snug to the mounting surface without twists, warps, or movement.

Ducts shall be installed parallel and perpendicular to surrounding structural lines. Diagonal runs or angle runs other than 90^{o} shall not be acceptable.

3.2.3.1.12 OUTLET BOX / BRACKET (Lines 1191-1206)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
Recessed Wall SG	Steel City CDOW-TG
Recessed Wall DG	Steel City 52171-xxx
Faceplate Bracket SG	Erico No. MP1P
Surface Mount SG	Hubbell MT34SBA-678SB, or Panduit JBX3510xx
Surface Mount DG	Hubbell MT678CTGB, or Panduit JBP2Dxx
Floor Outlet Box	Wiremold 500LR
Outlet Box Firestop	STI SSP4S

Outlet box/bracket units shall consist of the resources required to furnish/install ordered quantities (each) of various types of inside wiring outlet boxes or faceplate mounting brackets, as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

Recessed outlet boxes shall be metallic with dimensions of 2 1/2" W x 4" H x 2" D for single-gang boxes, and 4” W x 4” H x 2” D for double-gang boxes.

Recessed outlet boxes shall be galvanized, coated, flat rolled sheet-steel, UL Listed, wiring junction, outlet, or pull boxes, as required, with mounting holes and conduit knockouts. Metallic boxes shall also be provided with corrosion-

resistant covers and grounding screws for fastening surface and device type faceplates (not included), and for equipment grounding (not included).

Outlet box accessories shall be provided as necessary for each installation, including box support mounting ears and brackets, wallboard hangers, box extension rings, ceiling mount studs, box opening reducers (double-to single gang), etc.

Outlet boxes shall be fastened securely in/to the applied surfaces using appropriate anchors, brackets/clamps, and/or screws, as necessary. The outlet box shall also be coupled to surface raceway (not included) or conduit (not included), as applicable.

When outlet boxes are installed recessed in unobstructed wall cavities, in which cables (not included) can be pulled through without conduit, and there are no codes or other requirements disallowing this installation procedure at any given project site, outlet box knockout openings shall be bushed/grommeted and pulls provided through boxes with a six (6) inch, minimum, and twelve (12) inch, maximum, working stub length, nominal.

When outlet boxes are installed in a firewall, the outlet box shall be wrapped in a UL fire rated system in compliance with the NEC, NFPA-70 and Life Safety Codes. The outlet box FIRESTOP unit shall be used to order the FIRESTOP material and installation.

All FIRESTOP systems shall be installed as per the manufacturer's instructions and in accordance with NFPA-70, UL and Life Safety Codes. The FIRESTOP system shall be installed by installers who have been manufacturer-trained in their FIRESTOP systems. A copy of the UL FIRESTOP system shall be given to the building owner and to OTM on each project.

Cables (not included) pulled through outlet box knockout openings via conduit/raceways shall also be provided with bushings/grommets and six (6) inch, minimum, and twelve (12) inch, maximum, working stub length, nominal.

Outlet faceplate mounting brackets shall be of all plastic design with serrated interlocking mechanism for securing in place. Brackets shall be installed firmly, square with walls, and such that the edges of the bracket completely covers the cut-out.

Surface mount boxes shall be made of the same material and manufacturer as the surface raceway to which it is attached. Refer to Surface Raceway specifications earlier in this section.

Floor outlet boxes shall be the “tombstone” type. Floor outlet box shall attach to a 1" ID RGS sleeve and FIRE STOP (not a part of this unit) to accommodate the wiring from the floor below.

Unless approved otherwise in writing by the OTM Project Manager, mounting heights of outlet/surface mount boxes shall usually be:

- Eighteen (18) inches above finished floors (AFF) to centerline of boxes for wall mounted, desk type installations.
- Forty-eight (48) inches AFF to centerline of boxes for wall mounted, wall-phone type installations.
- At the wireway base for modular furniture type installations.

In general, all outlet box installations shall comply with the applicable requirements of the American with Disabilities Act (ADA). In the event of ambiguity or conflict, ADA requirements shall prevail.

3.2.3.2 VOICE WIRING UNITS

3.2.3.2.1 VOICE CABLE (Lines 2001-2063)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
6-pair PVC Riser Cable	General Cable No. 2133021
12-pair PVC Riser Cable	General Cable No. 2133027
25-pair PVC Riser Cable	General Cable No. 2133033
50-pair PVC Riser Cable	General Cable No. 2133161
100-pair PVC Riser Cable	General Cable No. 2133144
200-pair PVC Riser Cable	General Cable No. 2133323
300-pair PVC Riser Cable	General Cable No. 2133373
25-pair ARMM Cable	General Cable No. 2019000
50-pair ARMM Cable	General Cable No. 2019001
100-pair ARMM Cable	General Cable No. 7507601
200-pair ARMM Cable	General Cable No. 7507619
300-pair ARMM Cable	General Cable No. 7507627
400-pair ARMM Cable	General Cable No. 7507635
600-pair ARMM Cable	General Cable No. 7507643
6-pair Plenum Cable	General Cable No. 2131246
12-pair Plenum Cable	General Cable No. 2131440
25-pair Plenum Cable	General Cable No. 2131256
50-pair Plenum Cable	General Cable No. 2131376
100-pair Plenum Cable	General Cable No. 2131377
200-pair Plenum Cable	General Cable No. 2131442

300-pair Plenum Cable General Cable No. 2131474

Voice Cable units consist of the resources required to furnish/install ordered footage of multi-pair type cables, for analog and digital voice as well as some digital data applications, pulled in cable tray or surface raceway (not included in this unit), pulled in conduit (also not included) or ceilings/floors, or strapped to structures (straps included at nominal 5' intervals, nominal), as required at project sites and as indicated in the drawing standards and/or specifications provided herein applying to these units.

All unshielded cables shall be 24 AWG, solid annealed copper, UTP with Category 3, (minimum) compliance/performance rating as defined by ANSI/TIA/EIA Building Wiring Standard or equal approved in writing by OTM.

ARMM riser cables shall be 24 AWG, solid annealed copper, with Category 3 (minimum) compliance/performance rating as defined by ANSI/TIA/EIA Building Wiring Standard, and Specification 2507. All ARMM riser cable shall have a corrugated, adhesive coated Aluminum tape shield applied longitudinally with an overlapping wrap, and a flame retardant PVC jacket bonded to the coated aluminum.

Cable pairs shall be marked for positive pair mating and spirally striped color coded in accordance with the ANSI/ICEA S-80-576 Standard.

Cables with fifty (50) pairs and above shall be assembled in twenty-five (25)-pair binder groups.

Cable jackets/sheaths shall be polymer-based and have sequentially printed footage on the surface.

New cable pulled in existing conduit shall be installed using pull rope/string/wire already in the conduit. Existing rope/string/wire used to pull new cable shall be replaced, but not included in this unit, during installation of new cable where conduit fill ratio permits future additions. Projects in which existing conduit is discovered to be devoid of any kind of existing pull line shall be retrofitted with new pull line as specified in the pull line units, but not included in this unit.

Identification and marking of each installed cable shall be provided at each end/ termination location.

All cable shall be installed using pulling-grips with tension measuring devices (as required) and bending radii and pulling tensions not to exceed

manufacturers' recommendations as well as adherence to herein-referenced standards.

Cable shall also be installed with nominal 10 cable-ft. maintenance slack at each end and at any pull location(s) in between such as equipment rooms (ER's) and telecommunications closets (TC's).

Copper cables used inside buildings shall be listed with Underwriters Laboratories and "marked"/tested for the following applications:

Horizontal Non-plenum - "Type CM-(UL)" / Flame Test UL 1581. Note: Types CMR and CMP can both be used as substitutes in this environment.

Horizontal Plenum - "Type CMP-(UL)" / NFPA 262-1985 (UL 910). Note: No substitutions allowed in this environment.

Vertical Riser - "Type CMR-(UL)" / Flame Test UL 1666. Note: Type CMP can be used as a substitute in this environment.

3.2.3.2.2 SPLICE CASE (Lines 2064-2077)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
100-pair Indoor Splice Case	3M No. KB3-175-1
200-pair Indoor Splice Case	3M No. KB3-175-1
300-pair Indoor Splice Case	3M No. KB4-175-1
400-pair Indoor Splice Case	3M No. KB4-175-1
600-pair Indoor Splice Case	3M No. KB5-100-6
900-pair Indoor Splice Case	3M No. KB6-100-9
1200-pair Indoor Splice Case	3M No. KB7-100-15

Splice case units shall consist of the resources required to furnish/install ordered quantities (each) of Indoor Cable splice closures, as required at project sites and as indicated on the drawing standards and/or specifications provided herein applying to these units.

Closures shall be re-enterable and reusable. Closures shall be equipped with all necessary accessories such as splice organizers, stainless security bolts, cable support assemblies, bond bars with straps and clamps, external grounding adapters, etc.

Grounding straps shall bond all cable shields entering/exiting and any metallic parts of closures to ground sources that are common-bonded to the cable messenger and sheaths as part of this unit.

Inside splice closures shall be building-riser / dry-cable-entrance type closures. Closures shall be re-enterable and reusable with flame retardant bodies and end-caps. Closures shall be equipped with all necessary accessories including wall/rack mounting brackets and proper end caps to facilitate the size and number of cables entering or exiting the case.

Installation shall be in accordance with the manufacturer's instructions and herein-referenced codes and standards. Mounting shall be capable of horizontal or vertical positions.

Closures shall be suitable for use with new splices as well as existing splices by splitting end-caps.

All pairs, required to be continuous end-to-end, shall be spliced (not included in this unit). All spare pairs in the pair count shall be cleared/capped (not included in this unit). Splices and clear/caps shall be done as per splice units specified herein.

Installed closures shall be tagged (included) for identification as per marker units specified herein.

All indoor closures used with filled cable shall contain the gel material so that no runs or leaks occur.

3.2.3.2.3 SPLICE/CLEAR CAP (Lines 2078-2083)

Acceptable product names/part numbers:

Description	3M No.
1-pair Splice Connector	UR2
25-pair Splice Connector	3M710-SC1-25
1-pair Clear Cap	UCC

Splice units shall consist of the resources required to furnish/install ordered quantities (one [1] or twenty-five [25], as applicable) to splice or clear/cap, as applicable, and bundle/label per pair bundle of telephone-type wire using sealed, gel filled, moisture-resistant connectors, as required at project sites and as indicated on the drawing standards and/or specifications provided herein applying to these units.

Splice connectors shall be modular or single, as applicable, utilizing bridge, butt, clear/cap, half-tap, in-line, straight, etc. connections, as required. Connectors shall be crimp-on, press-on, or insertion types, as required, with gel sealant suitable for aerial, pedestal, or buried applications.

Splice connectors shall be suitable for use on Level 2 compliant wiring as defined by the UL Building Wiring Standards, minimum. Connections shall be quality grade for low loss and low noise transmission. All splices shall be "fold back" splices allowing ample slack (2 foot min.) within the splice case to allow for future changes or repairs.

3.2.3.2.4 TELEPHONE BACKBOARD (Lines 2084-2087)

Acceptable product names/part numbers:

Description	Manufacturer Names
A/C-grade Interior/Exterior Plywood	Georgia Pacific, Louisiana Pacific, and Weyer Hauser

Telephone backboard units shall consist of the resources required to furnish/install ordered quantities (each) of plywood backboards, with fire rating, painted, and accessories as applicable, and as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

Plywood backboards shall be 8' L x 4' W x ¾" D or 4' L x 4' W x ¾" D interior/exterior plywood A/C grade, as applicable, such that smooth A grade sides are exposed for hardware and equipment mounting. All plywood sheets used for backboards shall be either fire-rated or painted with a fire retardant paint, as required. Fire-rated backboards shall be provided by either using pre-treated or field-painted backboards which meet State Fire Marshal requirements. Field-painted backboards shall be entirely painted with light colored (white or off white), fire-retardant paint, or other color approved in writing by the OTM Project Manager.

The following shall be mounted on each sheet of plywood as a part of this unit.

1. Metal D-rings (quantity and size as needed) and mounted as needed near the side and/or bottom edges of the backboard at 12" intervals around the perimeter of the backboard.
2. All screws, washers, anchor bolts, and mounting hardware of sufficient quantity and size to adequately support the backboard and any blocks, cables and equipment to be fastened thereon.

All backboards shall be mounted for convenient access by technicians - fifty-four (54) inches AFF to board centerline, unless required otherwise by the OTM Project Manager, and two (2) feet and four (4) feet minimum clearance from the adjacent and opposite walls, respectively.

All backboards shall be securely fastened to walls/racks with a minimum of four (4) fasteners for 4' x 4' backboards and six (6) fasteners for 8' x 4' backboards. Fasteners shall be evenly spaced around backboard surface edges. Appropriate fasteners for the type of structure shall be used, for example: screws and expansion anchors for brick/masonry walls, wood screws for wood/stud walls, machine screws with washers and nuts for metal mounts, etc. Wood backboard fastener holes shall be countersunk so that fastener heads do not protrude above board surfaces. See drawing #T-3.1.

3.2.3.2.5 METAL BACKBOARDS (Lines 2088-2108)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
Half Backboard w/ 66 Blocks Blue	Varitronics No. M183A1
Half Backboard w/ 66 Blocks Green	Varitronics No. M183A2
Half Backboard w/ 66 Blocks Purple	Varitronics No. M183A4
Half Backboard w/ 66 Blocks Yellow	Varitronics No. M183A5
Half Backboard w/ 66 Blocks White	Varitronics No. M183A7
Half Backboard w/ 66 Blocks Gray	Varitronics No. M183A8
Full Backboard w/ 66 Blocks Blue	Varitronics No. M183B1
Full Backboard w/ 66 Blocks Green	Varitronics No. M183B2
Full Backboard w/ 66 Blocks Purple	Varitronics No. M183B4
Full Backboard w/ 66 Blocks Yellow	Varitronics No. M183B5
Full Backboard w/ 66 Blocks White	Varitronics No. M183B7
Full Backboard w/ 66 Blocks Gray	Varitronics No. M183B8
Half Backboard w/ Spools White	Varitronics No. M187A1
Full Backboard w/ Spools White	Varitronics No. M187B1
188-style Metal Backboard Manager	Avaya No. 188B2
188-style Metal Backboard 300-pair	Avaya No. 188D3
188-style Metal Backboard 900-pair	Avaya No. 188C3
110 Plastic Jumper Trough	Hubbell No. 110TRA

Metal backboard units shall consist of the resources required to furnish/install ordered quantities (each) of backboards of various sizes and/or colors, as required at project sites and as indicated on the drawing standards and/or specifications provided herein applying to these units.

Metal backboards shall be 183, 187, 188, and/or 110 types, as required, fully equipped with 89B or 89D brackets or spools, as required.

The various connection fields on all backboards shall be painted or pre-colored, metal backboards as per ANSI/TIA/EIA and BICSI function/color-codes, as required. See drawing #T-3.1.

3.2.3.2.6 GROUND WIRE, BAR, ROD (Lines 2109-2115)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
Ground Wire #6 Green	Southwire No. THHN-6-STR-GRN
Ground Bus Bar 4”x 24”	B-Line No. SB-476
Ground Rod ½”x 8’	Erico No. 611285

Grounding units shall consist of the resources required to furnish and install ordered quantities (each) of ground wire (ft.), bar kits, or ground rod and common bonding to a ground source as applicable, and as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

Ground wire shall consist of #6 AWG stranded copper grounding conductor with green PVC/PE type insulation placed between each bar or rod to a source(s) or terminal points and connected with appropriate ground lugs. Grounding conductors with green insulation may be used if conductors are provided with markers at all access points identifying the conductors as telecommunications grounds.

Each ground bar kit shall consist of a copper based bus bar .25" thick, 4" wide and two feet long to be mounted at the bottom edge of a backboard. The kit shall include six (6) (nominal) binding post type terminals each of which can connect a #6 AWG copper grounding conductor and the necessary threaded fasteners to securely mount the bus bar. Grounding conductor pathways shall not be diagonal to existing structural members. These conductors shall be pulled in some type of raceway (not included in this unit) for mechanical protection when necessary, such as for outdoor ground rods, etc.

Connections at bus bars, relay racks, and protectors shall be made with mechanical binding hole/compression-type connectors. Connections at cables shall be made with proper cable shield grounding kits (included). Connections made at metal closures (splice and distribution pedestal) shall be made with mechanical compression-type connectors (included). Connections at the source(s) shall be made with proper ground clamps (included with rod). Clamps normally used for conduit, hoses, etc. shall not be acceptable.

Ground rods shall be one-half (1/2) inch diameter by eight (8) ft. long copper clad steel rods with mechanical compression-type clamps.

All rods shall be driven using a water lubrication method. Rods shall be installed such that there shall be no tripping or equipment/machinery obstruction hazards.

Ground rod units shall include identification and location of all existing subsurface facilities/utilities in the pathway before any installation, and/or repairing any damages caused by the work, all at no extra charge. All permits and utility locates to cross city, parish, state and federal roads shall be the Contractor's responsibility.

All grounding systems installed shall be common-bonded to building power service entry grounding sources via #6 AWG copper grounding conductors with green PVC/PE type insulation. All connections shall be made-up tight and all components installed to render an effective grounding system. See drawing #T-3.1.

3.2.3.2.7 INTERCONNECT BLOCK (Lines 2116-2121)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
Intercon. Blk, 25 pr. 66 to (1) Telco	Siemon No. S66M1-50R
Intercon. Blk, 50 pr. 66 to (2) Telco	Siemon No. S66M2-5W
Intercon. Blk, 25 pr. 110 to (1) Telco	Siemon No. S700A110-B1-25
Intercon. Blk, 50 pr. 110 to (2) Telco	Siemon No. S700A110-B1-50

Interconnect block units shall consist of the resources required to furnish/install ordered quantities (each) of various types of interconnect connecting blocks and accessories, as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

Sixty-six (66) M type interconnect blocks shall be pre-wired/connectorized connecting blocks constructed of molded, self-extinguishing plastic with phosphor bronze, tin-plated quick clips. Quick clips shall be IDC type capable of terminating unskinned, plastic-insulated, solid copper conductors from 26 to 20 AWG, as well as skinned, solid copper conductors from 19 to 18 AWG.

Each 66M type interconnect block shall feature one or two fifty (50)-pin female or male telco connector(s), as required, pre-wired with standard pin/pair/color wiring and with hold-down straps, two (2) rows of quick clips with fifty (50)-pair; 89 type stand-off bracket, and orange hinged cover.

One-ten (110) type interconnect blocks shall be quiet-front, pre-wired/connectorized connecting blocks constructed of molded, fire-retardant

plastic with solder-plated quick clips. Quick clips shall be IDC type capable of terminating unskinned, plastic-insulated, solid or stranded copper conductors from 26 to 22 AWG.

Each 110 type interconnect block shall feature fifty (50)-pin, female or male telco connector(s), as required, pre-wired with standard pin/pair/color wiring and with hold-down straps; four (4) or five (5)-pair connector blocks, wiring block with stand-off legs; and termination designation strips with color as required, and clear cover over labels.

Interconnect blocks shall be UL Listed and have a minimum Category 3 compliance/performance rating as defined by the ANSI/TIA/EIA-568-B Building Wiring Standard.

All connecting blocks shall be securely mounted directly on backboards (not included) or frame/racks (not included), as required. Sixty-six (66) M type interconnect blocks shall be mounted with integral 89B (or 89D, as required) stand-off brackets or 110 type interconnect blocks with integral wiring blocks and detachable stand-off legs.

Pair terminations and interconnections are not included in this unit.

3.2.3.2.8 CROSS-CONNECT BLOCK – 66-TYPE (Lines 2122-2129)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
66 Block, 50 pr.	Siemon No. S66M1-50
Stand-Off Bracket	Siemon No. S89B
Hinged Cover	Siemon No. MC4LH – x
Labels	Siemon No. MC4-LBL-25

Cross-connect block units shall consist of the resources required to furnish/install ordered quantities (each) of various types of cross-connect connecting blocks and accessories, as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

Sixty-six (66) M type cross-connect blocks shall be constructed of molded, self-extinguishing plastic with phosphor bronze, tin-plated quick clips. Quick clips shall be IDC type capable of terminating un-skinned, plastic-insulated, solid copper conductors from 26 to 20 AWG, as well as skinned, solid copper conductors from 19 to 18 AWG. 66M type cross-connect blocks shall be UL Listed and, rated as a minimum Category 5E as defined by the ANSI/TIA/EIA-568-B Building Wiring Standard.

Each sixty-six (66)M type cross-connect block shall feature two (2) rows of quick clips with twenty-five (25)-pair, or fifty (50)-pair capacity as required; 89 type stand-off bracket are included as part of this unit. Removable colored hinged cover shall be ordered separately. The hinged cover shall include the sticky label.

All connecting blocks shall be securely mounted directly on backboards (not included) or frame/racks (not included), as required. Sixty-six (66)M type cross-connect blocks shall be mounted on 89 type stand-off brackets, when ordered.

Pair terminations and cross-connections are not included in this unit.

3.2.3.2.9 CROSS-CONNECT BLOCK – 110/6110-TYPE (Lines 2130-2154)

The following items are **NAME BRAND SPECIFIC**. Alternates shall not be acceptable.

Description	Manufacturer / Part No.
110-block, 100-pair	Hubbell No. 110BLK100BWL
110-block, 100 pr. w/C4's	Hubbell No. 110BLK100FTK4
110-block, 100 pr. w/C5's	Hubbell No. 110BLK100FTK5
110-block, 300 pr.	Hubbell No. 110BLK300BWL
110-block, 300 pr. w/C4's	Hubbell No. 110BLK300FTK4
110-block, 300 pr. w/C5's	Hubbell No. 110BLK300FTK5
110-block, 200 pr. rack w/C4's	Hubbell No. 110RM24
C4 connector	Hubbell No. 110CB4PR10 (single piece)
C5 connector	Hubbell No. 110CB5PR10 (single piece)
6-110 Block, 64-pair	Hubbell No. 6110FTK64WL
6-110 blk, 64 pr. w/C4's	Hubbell No. 6110FTK64WL
6-110 Block, 192-pair	Hubbell No. 6110FTK192WL
6-110 blk, 192 pr. w/C4's	Hubbell No. 6110FTK192WL
6-110 blk, 200 pr. rack w/C4's	Hubbell No. 6110RM1
6-110 C4 connector	Hubbell No. 6110CB4PR10 (single piece)

Cross-connect block units shall consist of the resources required to furnish/install ordered quantities (each) of various types of cross-connect connecting blocks and accessories, as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

110 type cross-connect blocks shall be constructed of molded, fire-retardant plastic with plated quick clips. Quick clips shall be IDC type capable of terminating un-skinned, plastic-insulated, solid or stranded copper conductors

from 26 to 22 AWG, as well as skinned, solid or stranded copper conductors from 20 to 19 AWG. 110 type cross-connect blocks shall be UL Listed and, rated as a minimum Category 5E as defined by the ANSI/TIA/EIA-568-B-2 Building Wiring Standard.

Each 110 type cross-connect block shall accommodate and include 4 or 5 pair connector blocks to capacity, as applicable, wiring block with stand-off legs and colored termination designation strips with clear covers as required and included as a part of this unit.

Category 6 one-ten (6-110) type cross-connect blocks shall be constructed of molded, fire-retardant plastic with plated quick clips. Quick clips shall be IDC-type capable of terminating un-skinned, plastic-insulated, solid or stranded copper conductors from 26 to 22 AWG. 110 cross-connect blocks shall be UL Listed and, rated as a minimum Category 6 as defined by the ANSI/TIA/EIA-568-B-2 Building Wiring Standard.

Each 6-110 type cross-connect block shall accommodate and include 4 pair connector blocks to capacity, wiring block with stand-off legs and colored termination designation strips with clear covers as required and included as a part of this unit.

All connecting blocks shall be securely mounted directly on backboards (not included) or frame/racks (not included), as required. 110 and 6-110 type cross-connect blocks shall be mounted on integral stand-off legs.

Pair terminations and cross-connections are not included in this unit.

3.2.3.2.10 MULTIPLE CONNECTING BLOCK (Lines 2155-2158)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
Multi-Connect Block, 25 pr.	Siemon No. S66B4-25
Bridged 110 Block	Avaya No. 110AB1-25M

Multiple connecting block units shall consist of the resources required to furnish/install ordered quantities (each) of various types of multi connect connecting blocks and accessories, as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

Sixty-six (66) B type multi connect blocks shall be constructed of molded, self-extinguishing plastic with phosphor bronze, tin plated quick clips. Quick clips

shall be IDC type capable of terminating un-skinned, plastic-insulated, solid copper conductors from 26 to 20 AWG, as well as skinned, solid copper conductors from 19 to 18 AWG.

Each 66B type multi connect block shall feature six (6), eight (8), or ten (10) rows of quick clips with twenty-five (25)-pair, fifty (50)-pair, one-hundred (100)-pair, or one-hundred-twenty-five (125)-pair capacity.

110 style blocks shall be pre-wired, with four rows, to form common bridged multiple terminations for up to 25 circuits.

Multi-connect blocks shall be UL Listed and rated a minimum Category 3 compliance/performance rating as defined by the ANSI/TIA/EIA-568-B Building Wiring Standard.
All connecting blocks shall be securely mounted directly on backboards (not included) or frame/racks (not included), as required.

Pair terminations and multi connections are not included in this unit.

3.2.3.2.11 CROSS-CONNECT (Lines 2159-2166)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
1-pair Cross-Connect Wire	General Cable No. 2113054
2-pair Cross-Connect Wire	General Cable No. 2114307
2-position Bridge Clips	Siemon No. SA1-xxxx

Cross-connect units shall consist of the resources required to furnish/install ordered quantities of cross-connect jumpers (average 10 foot length) , as applicable, or reels of bulk jumper wire or bridging clips, as required at project sites and as indicated in the drawing standards and/or specifications herein applying to these units.

Cross-connect wire shall be UL Listed, nominal 24 AWG, UTP, solid annealed copper, jumper/hook-up type wire rated for voice and data transmission up to 16 Mbps, and suitable for connecting lug type terminal blocks inside outdoor cross connect enclosures.

Each conductor shall be individually insulated with PVC and color coded to distinguish each conductor and pair.

Pair twist integrity shall be maintained during installation from connection to connection.

Jumper lengths shall be installed with sufficient slack to allow for possible transfer swing-overs.

Jumpers shall be loosely bundled and routed through the distribution hardware inside the cross connect enclosure. Cross connect wire shall not run across the face of the terminal blocks.

All conductor terminations shall be made with appropriate tools so that quality connections are made. Made-up terminations shall not be remade without first clipping off the old connected wire tip.

Cross-connect clips shall be tinned copper with bridging clips suitable for connecting adjacent terminals (quick clips) on 66 blocks. These clips shall be two (2) position, as required.

3.2.3.2.12 TERMINATION (Lines 2167-2173)

Termination units consist of the resources required to terminate, mark, label, and test ordered quantities (each) of one (1)-pair, four (4)-pair, twenty-five (25)-pair, fifty (50)-pair, or one-hundred (100)-pair bundles of paired-wire to binding-post or IDC type terminals and mark each pair/terminal for identification, as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

All terminations shall be done with the proper tool(s) designed for the specific type of termination so that good quality connections with the lowest possible attenuation loss result.

All multiple terminations (half-taps, etc.) shall be made-up on a one-conductor-per-one-clip/terminal basis.

All terminations shall be first-time connections and made-up on new, unused connecting blocks (not included) unless otherwise authorized in writing by the OTM Project Manager.

Voice and slow speed data terminations and associated wiring (not included) shall be made-up, marked, and tested to Category 3 compliance/performance rating as defined by the ANSI/TIA/EIA Building Wiring Standard, minimum.

Intermediate to fast data terminations and associated wiring (not included) shall be made-up, marked, and tested to Category 3, 5E, or Category 6 compliance/performance rating as defined by the ANSI/TIA/EIA-568-B Commercial Building Wiring Standards, as required.

All terminations and associated wiring (not included) shall also be tested according to the applicable parts.

Voice and data wiring terminations shall be made-up in accordance with various standards as applicable on a per-project basis. These standards are, but are not limited to, the following:

1. USOC, 3-pair
2. USOC, 4-pair
3. TIA, T568A
4. TIA, T568B

3.2.3.2.13 TELCO CONNECTOR/CABLE (Lines 2174-2200)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
Telco Jumper, M-F, 5-ft	Vari-tronics VTC-PVC-025-PC-005-G-U-C3
Telco Jumper, M-M, 5-ft	Vari-tronics VTC-PVC-025-PP-005-G-U-C3
Telco Jumper, F-F, 5-ft	Vari-tronics VTC-PVC-025-PC-005-G-U-C3
Telco Jumper, F-Open, 5-ft	Vari-tronics VTC-PVC-025-CX-005-G-U-C3
Telco Jumper, M-Open, 5-ft	Vari-tronics VTC-PVC-025-PX-005-G-U-C3
Telco Jumper, M-F, 10-ft	Vari-tronics VTC-PVC-025-PC-010-G-U-C3
Telco Jumper, M-M, 10-ft	Vari-tronics VTC-PVC-025-PP-010-G-U-C3
Telco Jumper, F-F, 10-ft	Vari-tronics VTC-PVC-025-PC-010-G-U-C3
Telco Jumper, F-Open, 10-ft	Vari-tronics VTC-PVC-025-CX-010-G-U-C3
Telco Jumper, M-Open, 10-ft	Vari-tronics VTC-PVC-025-PX-010-G-U-C3
Telco Jumper, M-F, 15-ft	Vari-tronics VTC-PVC-025-PC-015-G-U-C3
Telco Jumper, M-M, 15-ft	Vari-tronics VTC-PVC-025-PP-015-G-U-C3
Telco Jumper, F-F, 15-ft	Vari-tronics VTC-PVC-025-PC-015-G-U-C3
Telco Jumper, F-Open, 15-ft	Vari-tronics VTC-PVC-025-CX-015-G-U-C3
Telco Jumper, M-Open, 15-ft	Vari-tronics VTC-PVC-025-PX-015-G-U-C3
Telco Jumper, M-F, 25-ft	Vari-tronics VTC-PVC-025-PC-025-G-U-C3
Telco Jumper, M-M, 25-ft	Vari-tronics VTC-PVC-025-PP-025-G-U-C3
Telco Jumper, F-F, 25-ft	Vari-tronics VTC-PVC-025-PC-025-G-U-C3
Telco Jumper, F-Open, 25-ft	Vari-tronics VTC-PVC-025-CX-025-G-U-C3
Telco Jumper, M-Open, 25-ft	Vari-tronics VTC-PVC-025-PX-025-G-U-C3
Telco Connector, Male	AMP No. 229912-1
Telco Connector, Female	AMP No. 229913-1

Telco connector units shall consist of the resources required to furnish/install ordered quantities (each) of various types of fifty (50)-pin connectors, as required at project sites and indicated in the drawing standards and/or specifications herein applying to these units.

Telco connectors (also known as Amphenol, Champ, fifty (50)-position miniature ribbon, RJ21X connectors) shall be twenty-five (25)-pair (fifty [50]-pin) connector kits constructed of high-impact, fire retardant components and housings with hold-down screws, 90^{o} or 180^{o} cable entry with strain relief and flanging appropriate for cable-to-cable or panel mount applications, and phosphor-bronze tin-plated contacts and IDC terminals capable of terminating un-stripped 26 to 22 AWG solid copper conductors.

Telco connectors shall have pin-out and color coding in accordance with the Western Electric Standard and also have Category 3 compliance/performance rating as defined by the ANSI/TIA/EIA-568-B Building Wiring Standard, minimum.

3.2.3.2.14 MODULAR ADAPTER / SPLITTER (Lines 2201-2210)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
Modular Adapter, 4/6-pin to Telco	Ortronics No. OR-8120x153AMx
Modular Adapter, 8-pin to Telco	Ortronics No. OR-8120x259A
Splitter, 568B plug to (2) USOC jacks	Siemon No. YA4-U2-U2
Splitter, 568B plug to (4) USOC jacks	Siemon No. YA4-4U1

Modular adapter/splitter units shall consist of the resources required to furnish/install ordered quantities of various types of modular adapters or splitters, as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

Modular adapters and splitters shall be constructed of high-impact, fire-resistant components with tin-plated, phosphor-bronze contacts that can render Category 3 compliance/performance rating as defined by the ANSI/TIA/EIA-568-B Building Wiring Standard, minimum.

Telco connector-to-modular adapters shall be single or "harmonica" types converting from one (1) telco connector to one (1), six (6), eight (8), twelve (12), or twenty-four (24) modular jacks (6P4C or 8P8C) as required. Telco connector-to-modular adapters shall also be as specified for telco connectors and telecommunications outlets elsewhere herein, and be pre-wired to various pin configurations as required.

Modular splitters shall be RJ-45 type, converting out one (1) 568B wired plug into two (2) or four (4) USOC wired RJ-45 jacks as required. Modular splitters shall also utilize a pigtail construction for flexibility between the plug and jacks.

All contacts/pins shall be quality grade ensuring good voice and data connections.

3.2.3.3 FIBER OPTIC UNITS

3.2.3.3.1 FIBER OPTIC CABLE (Lines 3001-3060)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
Indoor Non-Plenum Multimode Fiber	Avaya No. ABC-xxxD-LRX
Indoor Non-Plenum Singlemode Fiber	Avaya No. ABC-xxxD-SRX
Indoor Non-Plenum Composite Fiber	Avaya No. ACC-xx/xxD-S/LRX
Indoor Plenum Multimode Fiber	Avaya No. ABC-xxxD-LPX
Indoor Plenum Singlemode Fiber	Avaya No. ABC-xxxD-SPX
Indoor Plenum Composite Fiber	Avaya No. ACC-xx/xx-S/LPX
Indoor/Outdoor Multimode Fiber	Fitel No. AT-RU91206-xxx
Indoor/ Outdoor Singlemode Fiber	Fitel No. AT-3401206-xxx
Indoor/Outdoor Composite Fiber	Fitel AT-XUR1206-xxx-xx/xx-34
Outdoor/Plenum Multimode Fiber	BerkTek LTRxxx-CB3510/25
Outdoor/Plenum Singlemode Fiber	BerkTek LTRxxx-AB0504
Outdoor/Plenum Composite Fiber	BerkTek LTRxxx-xxxCB/xxxAB

Fiber optic cable units shall consist of the resources required to furnish/install ordered footage of various types of optical fiber cable laid in cable tray or surface raceway (not included in this unit), pulled in conduit (also not included), or strapped to structures (straps included at 2' intervals, nominal), as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

Fiber optic cable shall be either loose buffer tube type or tight-buffered type for use on indoor or outdoor plant applications, as applicable. Each cable shall be of all dielectric construction with dielectric central member; doped silica core(s) clad with concentric silica coated with acrylate protective coating(s) within gel filled tube(s) or tight buffer(s) and sub-unit jacket(s) (as required), as applicable; surrounded by an interstitial filling/dielectric strength member(s) with ripcord and flame-retardant tape (as applicable) and PE outer sheath/jacket with indelible, legible, sequential markings on the surface in approximately two (2) ft. increments indicating the cable manufacturer, footage, year of manufacture, NESC symbol, UL Listing/flame rating, and cable/fiber type, as applicable.

Multimode fiber shall meet ANSI/TIA/EIA-492AAAA-A, "Detail Specification for 62.5 µm Core Diameter / 125 µm Cladding Diameter Class 1a Multimode, Graded Index Optical Waveguide Fibers," and ANSI/TIA/EIA-492-AAAB,

"Detail Specification for 50 µm Core Diameter / 125 µm Cladding Diameter Class 1a Multimode, Graded Index Optical Waveguide Fibers."

Single-mode optical fibers shall be Class IVa Dispersion-Unshifted Single-mode optical fibers and shall comply with ANSI/TIA/EIA-492CAAA.

The mechanical and environmental specifications for indoor optical fiber cables shall be in accordance with ANSI/ICEA S-83-596.

The mechanical and environmental specifications for plenum all-dielectric indoor optical fiber shall be in accordance with ANSI/TIA/EIA-472C000-A.

The mechanical and environmental specifications for outdoor optical fiber cables shall be in accordance with ANSI/ICEA S-87-640.

The mechanical and environmental specifications for outdoor plant all-dielectric outdoor optical fiber shall be in accordance with ANSI/TIA/EIA-472D000-A.

In general:

Outdoor plant cables shall meet all requirements stated in REA-PE-90.

Identification and marking of each installed cable shall be provided at each end/ termination and splice location. All installed cables shall be tagged as specified in the applicable parts of marker units elsewhere herein.

All fibers in each cable shall be usable fibers and meet required specifications.

Cables used for outdoor plant applications shall be UV-protected.

Cables used for indoor horizontal applications shall have an orange colored outer jacket for multimode and a yellow colored outer jacket for single mode.

Loose-tube cable fibers shall not adhere to the inside of the buffer tubes.

Each fiber and buffer tube shall be distinguishable from others by means of color coding which meets the TIA/EIA-598-A Optical Fiber Color Coding Standard.

Central members shall be constructed dielectric materials capable of preventing cable buckling.

Cable buffer tube and interstitial core water-blocking filling compound shall be non-hygroscopic, fungus-proof, electrically nonconductive, homogenous gel.

Gel shall be free from dirt and foreign matter and readily removable with conventional nontoxic solvents.

Tensile strength shall be provided by high tensile strength aramid yarns and/or fiberglass yarns helically stranded evenly around cable cores.

Cables shall be sheathed with medium density polyethylene. The minimum nominal jacket thickness shall be 1.4 mm. The polyethylene shall contain carbon black to provide UV protection, as applicable, and not promote fungus growth.

Cable jacket/sheaths shall be free of holes, splits, and blisters.

All optical fibers shall be proof tested by the manufacturer at 50 kpsi, minimum. During installations, cables shall NOT be stressed beyond the maximum tensile load (short and long term), and be crush resistance, impact cycle resistance, flex cycle resistance, and have the minimum bend radius specified by the manufacturer as tested by FOTP specifications. During installation, pulling grips and tension-limiting devices shall be used to insure proper pulling tensions have not been exceeded.

Cable shall also be installed with maintenance slack at each end and at any pull/splice location(s) in between, such as: equipment rooms (ER's), telecommunications closets (TC's), and hand/manholes.

Cable shall be packaged for shipment on non-returnable reels. Top and bottom ends of cable shall be sealed to prevent ingress of moisture and accessible for possible on-reel testing. Reels shall have a weather proof label identifying the reel and cable, and indicate the actual length of cable on-reel. Each reel shall be accompanied by a cable data sheet and test report to be released to the OTM Project Manager upon delivery to any project site.

Optical fiber cables used inside buildings shall be listed with Underwriters Laboratories and "marked"/tested and be installed in conformance with NEC code for fiber optic cables.

3.2.3.3.2 FIBER TERMINATION CABINET (Lines 3061-3090)

Acceptable product names/part numbers:

Description	Corning No.
Rack Mount 12-port Termination Cab.	CCH-01U
Rack Mount 24-port Termination Cab.	CCH-02U
Rack Mount 36-port Termination Cab.	CCH-03U & CCH-TOP-CVR

Rack Mount 72-port Termination Cab.	CCH-04U & CCH-TOP-CVR
Wall Mount 12-port Termination Cab.	WCH-02P
Wall Mount 24-port Termination Cab.	WCH-04P
Wall Mount 36-port Termination Cab.	WCH-06P
Wall Mount 48-port Termination Cab.	WCH-08P
Wall Mount 72-port Termination Cab.	WCH-12P
Environmental 12-port Term. Cabinet	EDC-02P-NH
Environmental 36-port Term. Cabinet	EDC-06P-NH
Environmental 72-port Term. Cabinet	EDC-12P-NH

Fiber termination cabinet units shall consist of the resources required to furnish/install ordered quantities (each) of various types of fiber optic termination cabinets as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

Fiber cabinets shall be 19" rack or wall mount, as applicable, rigid, modular, UL Listed enclosures intended for terminating (cross-connecting/interconnecting) and/or splicing optical fibers indoors.

Fiber terminations and couplers are not included in the cabinet unit.

Cabinets used on fiber cable applications with metallic members (customer-furnished aerial or underground cable) shall be equipped with ground kits to which cable metallic members shall be grounded (not included) as per grounding specifications provided elsewhere herein.

Cabinets shall be capable of accepting a wide variety of types of single-mode or multi-mode couplers (not included) as per fiber coupler specifications provided elsewhere herein.

Cabinets shall be equipped with hinged, latchable doors and optional locks (as applicable). Cabinets shall be equipped with single or double doors, as applicable. Double door types shall keep end-user interfacing and installer compartments enclosed and separate.

Rack-mount cabinets shall be accessible from front and/or rear and shall come equipped with mounting kit for 19" racks, as required.

Environmental termination cabinets shall be NEMA 4X rated for indoor or outdoor use in industrial, marine, security, or traffic control applications.

Rack, wall, and environmental cabinets shall be securely mounted using appropriate fasteners at conveniently accessible heights for installation, cable-management, and maintenance personnel.

Cabinets shall come equipped with the necessary accessories for their applications, such as: cable entry clamps and strain relief provisions, grommets, fiber routing guides that maintain bend radius within limits, administration labels, jumper storage, etc.

3.2.3.3.3 FIBER COUPLER PANEL (Lines 3091-3104)

Acceptable product names/part numbers:

Description	Corning No.
ST Style Coupler Panel 6-port	CCH-CP06-15
SC Style Coupler Panel 6-port	CCH-CP06-57
MT-RJ Style Panel 6/12-port	CCH-CP06-97
ST Style Coupler Panel 12-Port	CCH-CP12-15
SC Style Coupler Panel 12-port	CCH-CP12-57
MT-RJ Style Panel 12/24-port	CCH-CP12-97
ST Style SM Coupler Panel 6-port	CCH-CP12-19
SC Style SM Coupler Panel 6-port	CCH-CP12-59
MT-RJ Style SM Panel 6/12-port	CCH-CP12-98
ST Style SM Coupler Panel 12-port	CCH-CP12-19
SC Style SM Coupler Panel 12-port	CCH-CP12-59
MT-RJ Style SM Panel 12/24-port	CCH-CP12-98
Blank Panel	CCH-BLNK

Fiber coupler panel units shall consist of the resources required to furnish/install ordered quantities (each) of various types of optical fiber coupler panels with integral couplers, or splice trays, inside the preceding fiber termination cabinets, as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units. Couplers shall mate their corresponding connectors as specified in the fiber connector unit designations specified herein.

Optical fiber couplers shall be UL Listed, ANSI/TIA/EIA-568-B compliant, compatible with single-mode or multi-mode optical fiber connectors, as applicable, and as per fiber optic cable unit specifications provided elsewhere herein, and shall be easy/fast field-installable. Fiber Coupler Panels shall also be compatible with fiber termination cabinet units specified elsewhere herein.

3.2.3.3.4 FIBER BREAKOUT KITS (Lines 3105-3106)

Acceptable product names/part numbers:

Description	Corning No.

Indoor/Outdoor Fiber Breakout Kit SFK-P-xx-xxx-x

Fiber breakout kits shall be spider fan-out design used to terminate loose-tube and/or tight-buffered fiber cables, as required, at low cost termination points not needing a termination cabinet/patch panel. The fiber breakout kit shall protect the individual fibers, up to 24 strands, with 3mm, kevlar reinforced, teflon lined buffer tubes between the breakout itself to the fiber connector. The length of the buffer tubes shall be one meter in length, minimum.

3.2.3.3.5 FIBER TERMINATION (Lines 3107-3118)

Acceptable product names/part numbers:

Description	Corning No.	AMP No.
Multimode ST Style Connector	95-101-44	492548-1
Multimode SC Style Connector	95-100-48	503948-5
Multimode MT-RJ Style Connector	91-100-97 (& pins)	1278398-2
Singlemode ST Style Connector	95-251-06	502579-3
Singlemode SC Style Connector	95-250-08	504646-7
Singlemode MT-RJ Style Connector	95-200-97 (& pins)	1278399-2

Fiber termination units shall consist of the resources required to furnish/install ordered quantities (each) of various types of optical fiber connectors as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

All loose tube cables shall be prepared and terminated using the connector manufacturer's recommended consumables kit and clear or properly color-coded buffer tube on each fiber strand. The entire length of all fiber strands shall be protected by buffer tubing a minimum of 900 microns in diameter. Terminations using strain relief on bare fiber strands shall not be accepted.

Optical fiber connectors shall be UL Listed, ANSI/TIA/EIA-568-B compliant, compatible with single-mode or multi-mode optical fibers, as applicable, and as per fiber optic cable unit specifications provided elsewhere herein, and shall be easy/fast field-installable.

ST connectors shall be small-size with keyed bayonet twist-lock coupling design and ceramic or PC finish ferrule, as applicable, fully compatible with existing ST hardware, for long-line systems and short-distance premises applications requiring low insertion and return loss. Return loss per mated pair for all terminated ST connectors shall not exceed .5 dB.

SC connectors shall be square design with push-pull mating interface feature and pull-proof ceramic or PC finish ferrule, as applicable, and snap together duplex

features for high packing density applications requiring low insertion and return loss. Return loss per mated pair for all terminated SC connectors shall not exceed .5 dB.

MT-RJ small form factor connectors shall be smaller in size with the RJ45 push-pull style housing, similar to the catch on telephone plugs, and pull proof PC-finished ceramic ferrule, for long-line systems and short-distance premises applications requiring low insertion and return loss. This connector unit shall include all necessary pins and manufacturer-specific hardware to provide a complete termination of a single end of two strands of fiber. Return loss per mated pair (single link) for all terminated MT-RJ connectors shall not exceed .5 dB.

3.2.3.3.6 FUSION/MECHANICAL FIBER SPLICE (Lines 3119-3122)

Acceptable product names/part numbers:

Description	Corning No.	3M No.
Fusion Splice Sleeve	2806031-01	2170
Mechanical Splice	95-000-04	2529

Fiber splice units shall consist of the resources required to furnish/install ordered quantities (each) of various types of optical fiber splices as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

Fiber splices shall have the same characteristics and requirements of the applicable parts of fiber optic cable units and fiber connectors units specified provided elsewhere herein. Fiber splices shall be either fused or mechanical, as applicable.

Fusion method is typically used for all fiber splices. The fusion method used shall be fast and render consistent low-loss splices under field conditions. The fusion splice unit shall include an individually itemized (not packaged quantities) protective heat shrink sleeve reinforced with piano wire installed on each fiber fused and spliced.

Mechanical method shall be re-enterable design capable of splicing either multimode or single-mode fibers. The mechanical splice shall be itemized individually (not packaged quantities) and have factory- published specifications for insertion loss of less than .2 dB average.

Fiber splices shall be used only for splicing requirements of absolute necessity, such as repairs or expansions to the existing plant. Splicing of cable between

buildings is not desirable and shall not be normally included in project planning. When/where splicing is authorized in writing by the OTM Project Manager, the Contractor shall splice as follows:

Fiber splice closures (not included) used outside of buildings shall be of appropriate size, watertight, and re-enterable.

Fusion splices made in the field shall be of factory-quality and tested for attenuation. Maximum optical attenuation for single-mode and multi-mode shall not exceed 0.1 dB when measured in accordance with ANSI/TIA/EIA-455-A.

Fiber splices shall be made by a trained, qualified technician with ample field experience. Each splice shall be tested and the actual loss recorded.

3.2.3.3.7 FIBER SPLICE CASE/TRAYS (Lines 3123-3130)

Acceptable product names/part numbers:

Description	3M No.
Indoor Splice Case 72-strand	2178-L/S-FR
Indoor Splice Case 144-strand	2178-L/S-FR
Fusion Splice Tray 24-strand	2524-FT

Fiber splice case units shall consist of the resources required to furnish/install ordered quantities (each) of various types of optical fiber splice cases, as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

Fiber splice cases shall be a non-filled gasket sealed enclosure constructed of chemically resistant, fire retardant material indoor use, as applicable, and expandable for higher capacities. This unit shall also include all necessary pieces, parts, grommets, fittings and accessories to make a complete and functional unit.

Fiber splice trays shall accommodate up to twenty-four (24) fusion splices, have integral devices or fasteners for securing buffer tubes (not included) to the tray, and be compatible with fiber splices cases specified elsewhere herein.

Fiber splice cases shall have the same mechanical and environmental characteristics and requirements of the applicable parts of the splice case unit specified elsewhere herein.

3.2.3.3.8 FIBER JUMPER (Lines 3131-3239)

Acceptable product names/part numbers:

Description	Corning No.
Multimode ST/ST Duplex Jumper	505002K7141xxxM
Multimode SC/ST Duplex Jumper	395002K7141xxxM
Multimode SC/SC Duplex Jumper	393902K7141xxxM
Multimode ST/MTRJ Duplex Jumper	509702KJ141xxxM
Multimode SC/MTRJ Duplex Jumper	399702KJ141xxxM
Multimode MTRJ/MTRJ Dup. Jumper	979702KJ141xxxM
Singlemode ST/ST Duplex Jumper	616102R7131xxxM
Singlemode SC/ST Duplex Jumper	586102R7131xxxM
Singlemode SC/SC Duplex Jumper	585802R7131xxxM
Singlemode ST/MTRJ Duplex Jumper	619802RJ131xxxM
Singlemode SC/MTRJ Duplex Jumper	589802RJ131xxxM
Singlemode MTRJ/MTRJ Dup. Jumper	989802RJ131xxxM

Fiber jumper units shall consist of the resources required to furnish/install ordered quantities of various types of factory-assembled, optical fiber patch cord or jumper-type cable assemblies, as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units. Fiber jumpers shall have the same optical characteristics and requirements of the applicable parts of fiber optic cable units and fiber connectors specified elsewhere herein.

All fiber jumpers supplied, whether for immediate equipment applications or for future applications by end-users, shall be factory-connectorized for low attenuation (0.5 dB max., 0.2 dB typ.) and excellent return loss performance.

3.2.3.4 LEGACY CABLE UNITS

3.2.3.4.1 COAX CABLE (Lines 4001-4008)

Acceptable product names/part numbers:

Description	Belden No.
RG-6 PVC Riser	9116R
RG-6 Plenum	9116P
RG-11 PVC Riser	9292
RG-11 Plenum	89292
DS-3, 734-series, PVC Riser	734A1
DS-3, 734 series, Plenum	734A1P

Coax cable units consist of the resources required to furnish/install ordered footage of various types of coaxial cable: laid in cable tray, surface raceway,

pulled in conduit (all not included), or strapped to structures (straps included at 5' intervals, nominal), as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

Coax type cables shall have the same or better physical and performance characteristics as those listed herein or equal, approved in writing by OTM.

Cable jackets/sheaths shall be polymer-based and have sequentially printed footage on the surface.

New cable pulled in existing conduit shall be installed using pull rope/string/wire already in the conduit. Projects in which existing conduit is discovered to be devoid of any kind of existing pull line shall be retrofitted with new pull line as specified in the pull line units, but not included in this unit.

Identification and marking of each installed cable shall be provided at each end/ termination location. All installed cables shall be tagged as specified in the applicable parts of marker units provided elsewhere herein.

All cable shall be installed using pulling-grips with tension measuring devices (as required) and bending radii and pulling tensions not to exceed manufacturers' recommendations as well as adherence to herein referenced standards.

Cable shall also be installed with a nominal 10' ft. long maintenance slack at each end and at any pull/splice location(s) in between such as equipment rooms (ER's) and telecommunications closets (TC's).

Copper cables used inside buildings shall be listed with Underwriters Laboratories and "marked"/tested for the following applications:

Horizontal Non-plenum - "Type CM-(UL)" / Flame Test UL 1581. Note: Type CMP can be used as a substitute in this environment.

Horizontal Plenum - "Type CMP-(UL)" / NFPA 262-1985 (UL 910). Note: No substitutions allowed in this environment.

3.2.3.4.2 COAX CONNECTOR (Lines 4009-4019)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
Crimp-F Connector, RG6 PVC	TNB No. SNS6
Crimp-F Connector, RG6 Plenum	TNB No. PL56CS

Crimp-F Connector, RG11 PVC	TNB No. SNS11AS
Crimp-F Connector, RG11 Plenum	TNB No. PL11CS
Crimp-M BNC Connector, RG6 PVC	Trompeter No. UPL220-020
Crimp-M BNC Connector, RG6 Plen.	Trompeter No. UPL220-024
Crimp-M BNC Connector, RG11 PVC	Trompeter No. UPL2000-D5
Crimp-M BNC Connector, RG11 Plen.	Trompeter No. UPL2000-D16
Crimp-M BNC Connector, DS-3 PVC	Trompeter No. UPL220-025
Crimp-M BNC Connector, DS-3 Plen.	Trompeter No. 105-1313-9

Coax connector units shall consist of the resources required to furnish/install ordered quantities (each) of various types of coaxial-type cable connectors, as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

Coax cable connectors shall be BNC and "F" style for RG-6, RG-11, and DS-3 cables as specified elsewhere herein.

Coax connector terminations shall be made by a trained, qualified technician with ample field experience. Coax connector terminations shall be tested and the actual test results recorded.

3.2.3.4.3 BALUN (Lines 4020-4023)

Acceptable product names/part numbers:

Description	AMP Part No.
RG-58 Balun	555982-2
STP Balun	558420-1
STP Balun	555414-2

Balun units shall consist of the resources required to furnish/install ordered quantities (each) of various types of baluns as described above, as required at project sites, and as indicated in the drawing standards and/or specifications provided herein applying to these units.

Baluns shall be impedance matching devices for adapting coaxial cable media to UTP media. These devices shall be of quality-grade, ensuring functionality of user's equipment and wiring. Baluns shall be equipped with connectors/contacts equivalent to applicable sections of coaxial cable connector, data connector, and communications outlet (jack) units as specified elsewhere herein.

3.2.3.5 DATA/LAN WIRING PLAN UNITS

3.2.3.5.1 LAN CABLE UNSHIELDED (5001-5012)

The following items are **NAME BRAND SPECIFIC**. Alternates shall not be acceptable.

Description	Manufacturer / Part No.
CAT-3 4-pair PVC	General Cable Spec. 4462, all colors
CAT-3 4-pair Plenum	General Cable Spec. 4459, all colors
CAT-5E 4-pair PVC	General Cable Spec. 8480, all colors
CAT-5E 4-pair Plenum	General Cable Spec. 8482, all colors
CAT-6 4-pair PVC	General Cable Spec. 7251, all colors
CAT-6 4-pair Plenum	General Cable Spec. 7252, all colors
CAT-5E 25-pair PVC	General Cable Spec. 8480, all colors
CAT-5E 25-pair Plenum	General Cable Spec. 8482, all colors

LAN cable unshielded units shall consist of the resources required to furnish/install ordered footage(s) of unshielded twisted pair (UTP) type cables for LAN-type data transport applications.

All unshielded twisted pair cables shall be 24 AWG, solid, annealed copper, 100 ohm impedance characteristics, having electrical and mechanical properties as defined by the ANSI/TIA/EIA-568-B.2 Commercial Building Wiring Standard, as applicable.

Cable jackets/sheaths shall be polymer-based and have sequentially printed footage on the surface. Cable sheaths should be colored according to their function. Colors may be assigned during project planning by the OTM Project Manager. Standard colors for LAN cables shall be white for voice, blue for primary data/LAN, pink for secondary data/LAN, and gray for an additional auxiliary port, as required and as applicable. In locations where an existing color and/or sequential labeling scheme exists, it shall continue to be followed unless otherwise instructed in writing by the OTM Project Manager.

New cable pulled in existing conduit shall be installed using pull rope/string/wire already in the conduit. Projects in which existing conduit is discovered to be devoid of any kind of existing pull line shall be retrofitted with new pull line as specified and ordered in the pull line units.

Identification and marking of each installed cable shall be provided at each end/ termination location. All installed cables shall be tagged as specified in the applicable parts of marker units provided elsewhere herein.

All cable shall be installed using pulling-grips with tension measuring devices (as required) and bending radii and pulling tensions not to exceed manufacturers' recommendations as well as adherence to referenced standards in ANSI/TIA/EIA-568-B.

Cables shall be pulled in cable tray or surface raceway (not included in this unit), pulled in conduit (also not included) on ceilings/floors, or strapped to structures (straps included at nominal 5' intervals, nominal), as required at project sites and as indicated in the drawing standards and/or specifications provided herein applying to these units. Cables shall be installed with a nominal 10' long maintenance slack at each end and at any pull boxes in between equipment room (ER's) and telecommunication closets (TC's).

Copper cables used inside buildings shall be listed with Underwriters Laboratories (UL) and "marked"/tested for the following applications:

Horizontal Non-plenum - "Type CM-(UL)" / Flame Test UL 1581. Note: Types CMR and CMP can both be used as substitutes in this environment.

Horizontal Plenum - "Type CMP-(UL)" / NFPA 262-1985 (UL 910). Note: No substitutions allowed in this environment.

Vertical Riser - "Type CMR-(UL)" / Flame Test UL 1666. Note: Type CMP can be used as a substitute in this environment.

3.2.3.5.2 LAN CABLE UNSHIELDED / OUTDOOR (5013-5016)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
CAT-5E 4-pair Direct Buried	Mohawk No. M57562
CAT-5E 4-pair Aerial	Mohawk No. M57561

LAN cable unshielded units shall consist of the resources required to furnish/install ordered footage(s) of outdoor unshielded twisted pair (UTP) type cables for LAN-type data transport applications.

All unshielded twisted pair cables shall be 24 AWG, solid, annealed copper, 100 ohm impedance characteristics, having electrical and mechanical properties as defined by the ANSI/TIA/EIA-568-B.2 Commercial Building Wiring Standard, as applicable.

Cable jackets/sheaths shall be polymer-based and have sequentially printed footage on the surface. Cable sheaths should be colored according to their function.

New cable pulled in existing conduit shall be installed using pull rope/string/wire already in the conduit. Projects in which existing conduit is

discovered to be devoid of any kind of existing pull line shall be retrofitted with new pull line as specified and ordered in the pull line units.

Identification and marking of each installed cable shall be provided at each end/ termination location. All installed cables shall be tagged as specified in the applicable parts of marker units provided elsewhere herein.

All cable shall be installed using pulling-grips with tension measuring devices (as required) and bending radii and pulling tensions not to exceed manufacturers' recommendations as well as adherence to referenced standards in ANSI/TIA/EIA-568-B.

Cables shall be pulled in cable tray or surface raceway (not included in this unit), pulled in conduit (also not included) on ceilings/floors, or strapped to structures (straps included at nominal 5' intervals, nominal), as required at project sites and as indicated in the drawing standards and/or specifications provided herein applying to these units. Cables shall be installed with a nominal 10' long maintenance slack at each end and at any pull boxes in between equipment room (ER's) and telecommunication closets (TC's).

3.2.3.5.3 UTP CABLE RUN (Lines 5017-5025)

UTP cable run units shall consist of the resources required to furnish and install ordered quantities of end-to-end LAN cable runs as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

All items necessary to complete a cable run unit shall be the brand names and part numbers of the applicable individual units specified in Sections 3.2.3.2.9, 3.2.3.5.1, 3.2.3.5.4, 3.2.3.5.5, 3.2.3.5.6, 3.2.3.5.8 and 3.2.3.5.10.

The UTP cable run shall include: the cable (average 150' length); recessed cut-in type faceplate mounting bracket; Cat. 3, 5E, or Cat. 6: jack insert; faceplate; termination of all cable pairs for UTP at jack end; 8 pin modular plug, or the termination of all cable pairs on an existing patch panel for UTP; Cat. 3, 5E, Cat. 6, 3' and 15' jumper; any necessary cross-connect, including c-connector clips and bridging clips; testing; labeling; and documentation.

The cable run shall be terminated in the Equipment Room as described earlier or on existing blocks or patch panels if available at the project site. All individual components of this unit shall conform to the specifications of the individual component units specified elsewhere in this Section 3.2.3.5.

New cable pulled in existing conduit shall be installed using pull rope/string/wire already in the conduit. Projects in which existing conduit is

discovered to be devoid of any kind of existing pull line shall be retrofitted with new pull line as specified in the pull line units, but not included in this unit.

Identification and marking of each installed cable shall be provided at each end/ termination location. All installed cables shall be tagged as specified in the applicable parts of marker units provided elsewhere herein.

All cable shall be installed using pulling-grips with tension measuring devices (as required) and bending radii and pulling tensions not to exceed manufacturers' recommendations as well as adherence to referenced standards.

Cable shall also be installed with a nominal 10' ft. long maintenance slack at each end and at any pull location(s) in between such as equipment rooms (ER's) and telecommunications closets (TC's).

Copper cables used inside buildings shall be listed with Underwriters Laboratories (UL) and "marked"/tested for the following applications:

Horizontal Non-plenum - "Type CM-(UL)" / Flame Test UL 1581. Note: Types CMR and CMP can both be used as substitutes in this environment.

Horizontal Plenum - "Type CMP-(UL)" / NFPA 262-1985 (UL 910). Note: No substitutions allowed in this environment.

Vertical Riser - "Type CMR-(UL)" / Flame Test UL 1666. Note: Type CMP can be used as a substitute in this environment.

3.2.3.5.4 COMMUNICATIONS OUTLET (Lines 5026-5040)

The following items are **NAME BRAND SPECIFIC**. Alternates shall not be acceptable.

Description	Hubbell Part No.
6P/6C RJ12 Voice Jack Outlet	HXJUxx
8P/8C RJ45 Voice Jack Outlet	HXJU8xx
CAT-3 Jack Outlet	HXJ3xx
CAT-5E Jack Outlet	HXJ5Exx
CAT-6 Jack Outlet	HXJ6xx
F-connector Bulkhead Outlet	SFFxx
BNC-connector Bulkhead Outlet	SFBxx
RCA 110-style Jack Outlet	SFRCx110
S-Video 110-style Jack Outlet	SFSV110
ST-bulkhead Outlet	SFSTx

SC-bulkhead Outlet	SFFSCx
MT-RJ-bulkhead Outlet	FAMTRJKx
Blank Insert	SFBx (each)

Communications outlet units shall consist of the resources required to furnish/install ordered quantities (each) of voice, data, and/or LAN jacks/connectors in various types and configurations, as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

Each wall or floor communications outlet shall consist of various user-configurable port faceplates and varying combinations and colors of communications inserts. Faceplate ports shall be equipped with one or more of the following; voice jacks, data/LAN jacks, coax connectors, or fiber optic connectors (as required), as applicable.

Voice jack(s) shall be either 6P4C (6-Position 4-Conductor) and/or 8P8C (8-Position 8-Conductor) modular having Category 3 compliance/performance rating as defined by the TIA/EIA Building Wiring Standard, as a minimum.

Data/LAN jack(s) shall be 8P8C (8-Position 8-Conductor, keyed as applicable) modular having Category 3, 5E, or 6 compliance/performance rating as defined by the ANSI/TIA/EIA-568-B.2 Building Wiring Standard.

Standard colors for jack/faceplate configuration shall be office white for voice, blue for primary data/LAN, orange for secondary data/LAN, and gold for an additional auxiliary port, as required and as applicable. Yellow shall be used for video conferencing/special circuits identified by the OTM Project Manager. Standard colors for coaxial and fiber optic inserts shall be office white. In locations where an existing color and/or sequential labeling scheme exists, it shall continue to be followed unless otherwise instructed in writing by the OTM Project Manager.

Voice and data/LAN jack wiring (connections/terminations, not included) shall be made-up in accordance with various standards as applicable on a per project basis. These standards are, but are not limited to, the following:

1. USOC, 3-pair
2. USOC, 4-pair
3. TIA, T568A
4. TIA, T568B

All other configurable inserts shall be as specified in the applicable parts of coax cable connector and fiber connector provided elsewhere herein.

All contacts/pins shall be quality grade ensuring good voice and data connections.

3.2.3.5.5 FACEPLATE (Lines 5041-5074)

The following items are **NAME BRAND SPECIFIC**. Alternates shall not be acceptable.

Description	Hubbell Part No.
Faceplate, 1-port Modular, Plastic	IFP11xx
Faceplate, 2-port Modular, Plastic	IFP12xx
Faceplate, 4-port Modular, Plastic	IFP14xx
Faceplate, 6-port Modular, Plastic	IFP16xx
Faceplate, 1-port Modular, Stainless Steel	SSF11
Faceplate, 2-port Modular, Stainless Steel	SSF12
Faceplate, 4-port Modular, Stainless Steel	SSF14
Faceplate, 6-port Modular, Stainless Steel	SSF16
Faceplate, Wall Phone Plate, Metal	P630S1G
Faceplate, 6-port Mod. DG, Plastic	IFP26xx
Faceplate, 12-port Mod. DG, Plastic	IFP212xx
Faceplate, 6-port Mod. DG, Stainless Steel	SSF206
Faceplate, 12-port Mod. DG, Stainless Steel	SSF212
Faceplate, Blank, Plastic	P14x
Faceplate, Blank, Stainless Steel	S14
Faceplate, 3/8” Diameter Hole, Plastic	P12x
Faceplate, 3/8” Diameter Hole, Stainless Steel	S12
Faceplate, 2-port Electrical, Plastic	IFP18x
Faceplate, 2-port Electrical, Stainless Steel	HPWS8
Faceplate, 2-port 106-frame	BR106x
Faceplate, 4-port 106-frame	Q106x
Faceplate, 2-port Modular Furniture	FP2xx
Faceplate, 4-port Modular Furniture, Quad	FP4xx
Faceplate, 4-port Modular Furniture, Linear	FP4Bxx
Faceplate, 2-port Surface Mount	ISM2xx
Faceplate, 4-port Surface Mount	ISM4xx

Faceplate units shall consist of the resources required to furnish/install ordered quantities (each) of various types of outlet faceplates, as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

Faceplates shall be UL Listed and constructed of high-impact, fire-resistant plastic or metallic as required. Color of faceplates shall normally be “office

white" for plastic and stainless steel for metallic, unless otherwise required by the end-user.

Faceplate ports shall have function ID marks - "VOICE", "DATA", and/or "LAN" (or telephone and/or computer icons) and color-coded office white for voice, blue for primary data/LAN, orange for secondary data/LAN, and gold for an additional auxiliary port, as required and as applicable. In locations where an existing color and/or sequential labeling scheme exists, it shall continue to be followed unless otherwise instructed in writing by the OTM Project Manager.

Faceplates shall be securely mounted with appropriate fasteners such that faceplates are aligned with surrounding architectural lines and are stationary. Mounted faceplates shall fully cover outlet box, knockout, and/or surface area openings.

The Contractor shall ensure the faceplates shall occupy all necessary jack components (not included) which are called for at each jack location at the project sites.

3.2.3.5.6 PATCH PANEL (Lines 5075-5084)

The following items are **NAME BRAND SPECIFIC**. Alternates shall not be acceptable.

Description	Hubbell Part No.
Patch Panel, CAT-5E, 12-port, Wall Mount	P5E12U
Patch Panel, CAT-5E, 24-port	P5E24UE
Patch Panel, CAT-5E, 48-port	P5E48UE
Patch Panel, CAT-6, 24-port	P624U
Patch Panel, CAT-6, 48-port	P648U
Patch Panel, Telco, 24-Port	BRCMCC3560619

Patch Panel units shall consist of the required resources to furnish/install ordered quantities (each) of various types of UTP cable patch panels, as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

Modular patch panels shall be multi-port panels with 8P8C jacks on front side, 110 Style termination on rear, and shall have a rating of Category 5E, or Category 6 compliance/performance, as a minimum, and as applicable.

Telco Patch Panels shall be multi-port panels with 8P8C T568B wired jacks on front side, male telco connectors on the rear, and shall have a rating of Category

3 compliance/performance, as a minimum. Ports shall be labeled and wiring configured sequentially from left to right for the length of the panel. Panel height shall be one rack-unit per 24-ports maximum.

Patch panels shall be capable of rack or wall mounting, as applicable.

Patch panel ports shall be compatible with the mating and wiring devices specified elsewhere herein.

All contacts/pins shall be quality grade ensuring good data connections.

3.2.3.5.7 PATCH CORD – VOICE (Lines 5085-5088)

Acceptable product names/part numbers:

Description	Hubbell Part No.
CAT-3 Patch Cord, 3-foot	PC219
CAT-3 Patch Cord, 7-foot	PC221
CAT-3 Patch Cord, 14-foot	PC224

Patch cord - voice units shall consist of the resources required to furnish/install ordered quantities (each) of various types of voice patch cords on wiring room patch panels / equipment (not included) and/or workstation outlet / equipment (not included), as required at project sites and as indicated in the drawing standards and/or specifications provided herein applying to these units.

Unshielded line extension cords shall have four (4) pairs, nominal, as applicable, 24 AWG stranded copper with eight (8)-pin modular plugs on each end, as applicable, with Category 3 compliance/performance rating as defined by the ANSI/TIA/EIA-568-B Building Wiring Standard.

These type cords shall also be compatible with the horizontal wiring (not included), patch panels (not included), and modular jacks (not included) as specified herein.

These type cords shall be connected to plugs such that physical strain on the conductor/pin terminations and the conductors is relieved. Cord jacket/sheaths shall be inserted in plug housings along with conductors for strain relief.

All contacts/pins shall be quality-grade ensuring good LAN and data connections.

All modular plugs shall come with a boot with integral anti-snag feature, minimum.

All patch cords shall be UL listed.

3.2.3.5.8 PATCH CORD - DATA/LAN (Lines 5089-5102)

The following items are **NAME BRAND SPECIFIC**. Alternates shall not be acceptable.

Description	Hubbell Part No.
CAT-5E Patch Cord, 3-ft.	PCX5Exx03
CAT-5E Patch Cord, 5-ft.	PCX5Exx05
CAT-5E Patch Cord, 7-ft.	PCX5Exx07
CAT-5E Patch Cord, 10-ft.	PCX5Exx10
CAT-5E Patch Cord, 15-ft.	PCX5Exx15
CAT-5E Patch Cord, 20-ft.	PCX5Exx20
CAT-6 Patch Cord, 3-ft.	PCX6xx03
CAT-6 Patch Cord, 5-ft.	PCX6xx07
CAT-6 Patch Cord, 7-ft.	PCX6xx07
CAT-6 Patch Cord, 10-ft.	PCX6xx10
CAT-6 Patch Cord, 15-ft.	PCX6xx15
CAT-6 Patch Cord, 20-ft.	PCX6xx20

Patch cord – data/LAN units (UTP) shall consist of the resources required to furnish/install ordered quantities (each) of various types and colors of data/LAN patch cords on wiring room patch panels / equipment (not included) and/or workstation outlet / equipment (not included), as required at project sites and as indicated in the drawing standards and/or specifications provided herein applying to these units.

Unshielded line extension cords shall have four (4) pairs, nominal, as applicable, 24 AWG stranded copper with eight (8)-pin modular plugs on each end, as applicable, with Category 5E or 6 compliance/performance rating as defined by the ANSI/TIA/EIA-568-B.2 Building Wiring Standard.

These type cords shall also be compatible with the horizontal wiring (not included), patch panels (not included), and modular jacks (not included) as specified herein.

Standard colors for Data/LAN patch cords shall be gray for CAT-6, and blue for CAT-5E. In locations where an existing color exists, it shall continue to be followed unless otherwise instructed in writing by the OTM Project Manager.

Bulk patch cord material shall be stranded and flexible Category 5E compliant 4 pair 24 gauge material. These type cords shall be connected to plugs such that physical strain on the conductor/pin terminations and the conductors is relieved.

Cord jacket/sheaths of various colors shall be inserted in plug housings along with conductors for strain relief.

All contacts/pins shall be quality grade ensuring good LAN and data connections.

All modular plugs shall come with a boot with integral anti-snag feature, minimum.

All patch cords shall be UL listed.

3.2.3.5.9 MODULAR PLUG (Lines 5103-5105)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
RJ45 Plug, CAT-5E 8-pin solid	AMP No. 5-569278-x
RJ45 Plug, CAT-5E 8-pin stranded	AMP No. 5-558530-x

Modular plug units shall consist of the resources required to furnish/install ordered quantities of modular plugs on horizontal wiring cables, field fabricated cord assemblies, etc., as required at project sites and as indicated in the drawing standards and/or specifications provided herein applying to these units.

Modular plugs shall be eight (8) pin modular plugs, as applicable, and high performance CAT-5E compliant/rated for data/LAN applications.

All modular plugs shall normally be T568B wired, unless otherwise required by the OTM Project Manager.

All modular plugs shall come with a color-coded identifier boot with integral anti-snag feature.

These type modular plugs shall be compatible with nominal 24 AWG solid or stranded, as required, as well as the horizontal wiring (not included), patch panels (not included), and modular jacks (not included) specified herein.

These type modular plugs shall be constructed of high impact, transparent thermoplastic with contacts/pins of quality grade, such as polished gold-plating (50 micro-inches, nominal) over nickel per FCC part 68 subpart F, ensuring good digital data transport at the appropriate CAT-5E or CAT-6 frequency/speed transmission rates.

All modular plugs shall be UL listed.

3.2.3.5.10 MODULAR 110/6-110 PATCH PLUG (Lines 5106-5113)

The following items are **NAME BRAND SPECIFIC**. Alternates shall not be acceptable.

Description	Manufacturer / Part No.
110-plug, CAT-5E solid/stranded, 1-pair	Hubbell 110FPP1PR
110-plug, CAT-5E solid/stranded, 4-pair	Hubbell 110FPP4PR
110-plug, CAT-6 solid/stranded, 1-pair	Hubbell 6110FPP1PR
110-plug, CAT-6 solid/stranded, 1-pair	Hubbell 6110FPP4PR

Modular 110/6110 patch plug units shall consist of the resources required to furnish/install ordered quantities of modular plugs on horizontal wiring cables, field fabricated cord assemblies, etc., as required at project sites and as indicated in the drawing standards and/or specifications provided herein applying to these units.

110 style patch plug shall be CAT-5E-compliant and mate with 110-style Blocks.

6-110 style patch plug shall be CAT-6-compliant and mate with 6-110 style Blocks.

All modular plugs shall normally be T568B wired, unless otherwise required by the OTM Project Manager.

These type modular plugs shall be compatible with nominal 24 AWG solid or stranded, as required, as well as the horizontal wiring (not included), patch panels (not included), and modular jacks (not included) specified herein.

These type modular plugs shall be constructed of high impact, transparent thermoplastic with contacts/pins of quality grade, such as polished gold-plating (50 micro-inches, nominal) over nickel per FCC part 68 subpart F, ensuring good digital data transport at the appropriate CAT-5E or CAT-6 frequency/speed transmission rates.

All modular plugs shall be UL listed.

3.2.3.5.11 PROTECTOR DATA/LAN (Lines 5114-5115)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.

CAT-5E 4-pair Protector ITW Linx No. CAT5-LAN

Protector data/LAN units shall consist of the resources required to furnish/install ordered quantities (each) of various types of data/LAN type cable surge protectors, as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

Data or LAN cable surge protectors shall be modular 8 pin (male to female), or 110-style (in and out), and CAT-5E-compliant as specified elsewhere herein. All protectors shall be equipped with a green ground wire with integral lug.

Protectors shall have polished and tarnish resistant contacts, polyethylene insulators and have the following electrical/mechanical characteristics: impedance, 100 ohms, as applicable; clamp voltage nominal 7.5 volts, 18 volts maximum, peak pulse current 60 amps nominal, 132 amps maximum, response time less than 5 nanoseconds, maximum shunt capacitance less than 40 picofarads.

Unit shall be protected on all 8 contacts/pins, which shall be quality-grade ensuring good LAN and data connections.

3.2.3.6 SUPPORT SYSTEM HARDWARE UNITS

3.2.3.6.1 RACK/BRACKET (Lines 6001-6007)

Acceptable product names/part numbers:

Description	Chatsworth	Hubbell
Rack, Free Standing 19"x 84”	55053-703	HPW84RR19
Rack, Wall Mnt. 19"x 36"x 15”	11791-718	HPWWMR36
Hinged Bracket, 19”x 3.5”H	11521-708	BRMCCMB19X35X8
Hinged Bracket, 19”x 7”H	11521-708	BRMCCMB19X7X8

Rack/bracket units shall consist of the resources required to furnish/install ordered quantities (each) of various types and colors of equipment relay racks or wall-mount brackets, as applicable, as described above, and as required at project sites and as indicated in the drawing standards and/or specifications provided herein applying to these units.

Free-standing relay racks shall be 19"W x 84"H, nominal, aluminum free-standing, dual-sided TIA/EIA hole spacing. The rack shall be installed using factory-recommended anchor bolts to secure the rack to any type of floor and be equipped with grounding lugs used to common-bond the racks to the grounding system and other accessories, as applicable. Exact bolting locations for racks

shall be designated by end-users. All relay racks shall be bonded and grounded unless otherwise directed by the OTM Project Manager.

Wall-mount relay racks shall be 19"W x 36"H x 15"D, nominal, aluminum or painted steel, single sided TIA/EIA hole spacing. The rack shall be installed using factory recommended anchor bolts to secure the rack to any type of wall and be equipped with grounding lugs used to common-bond the racks to the grounding system and other accessories, as applicable. Once installed, the rack shall be capable of supporting 100 pounds of owner-provided hubs and equipment. Wall-mount rack shall be of a *hinged designed*, allowing the State to access the rear of any equipment installed in the rack. Exact bolting locations for racks shall be designated by end-users.

Wall-mount hinged brackets shall be 19”W x 6”D and 3.5”H or 7”H as applicable, aluminum or painted steel with TIA/EIA hole spacing. The rack shall be installed using factory-recommended anchor bolts to secure the rack to any type of wall and be equipped with grounding lugs used to common-bond the racks to the grounding system and other accessories, as applicable.

The standard color for all rack/bracket equipment shall be black. In locations where an existing color exists, it shall continue to be followed unless otherwise instructed in writing by the OTM Project Manager.

3.2.3.6.2 RACK ACCESSORIES (Lines 6008-6021)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
Shelf, 19” Rack Mount	Chats. 40117-719, Hubbell MCCCS19P
Heavy Duty Shelf	Chats. 11164-719, Hubl. MCCCWS19HD
Frame Bracket, (4) 66-brackets	Siemon No. CC-2014-TB-DC
Frame Bracket, (8) 66-brackets	Siemon No. CC-2024-TB-DC
Frame Bracket, Protector Brack.	Chatsworth No. 11448-701
Horizontal Power Surge Strip	Tripplite IBAR-12, Hubbell MCCPSS19
Vertical Power Surge Strip	Tripplite SS7415-15, Homaco PS4815A10P

Rack accessory units shall consist of the resources required to furnish/install ordered quantities (each) of various types of relay rack accessories such as shelves, brackets to support 66m-type blocks or 110-style blocks, cable protectors , or power surge strips as applicable, as described below, and as required at project sites and as indicated in the drawing standards and/or specifications provided herein applying to these units.

The shelf shall be designed to fit a standard 19" width relay rack, 5 inches in height and a minimum of 12 inches deep. The shelf shall be constructed of painted aluminum or steel, be vented, and capable of supporting fifty pounds.

The heavy-duty shelf shall be designed to fit a standard 19" width relay rack, 5 inches in height and a minimum of 20 inches deep. The shelf shall be constructed of painted aluminum or steel, and capable of supporting one hundred and fifty pounds.

The frame bracket for 66M-type blocks shall be constructed of painted steel or aluminum, and designed to fit a standard 19" relay rack. The bracket shall come equipped with four (4) or eight (8), as applicable, plastic 89B brackets and plastic distribution spools or loops along the top and bottom of the bracket.

The frame bracket(s) for cable protector modules shall be constructed of aluminum or painted steel and designed to fit a standard 19" relay rack. The bracket(s) shall be capable of supporting two (2) 100 pair protector units and modules (not a part of this unit).

The horizontal power surge strip shall be constructed of aluminum or painted steel, designed to fit a standard 19” relay rack, and have a minimum 10-foot cord length. The horizontal power surge strip shall have a minimum of six outlets 110 VAC, 15 amp, 60 Hz, protect normal and common modes 26,000/22,000 peak milliamps, 50-60 dB, clamping voltage 330/400, and meet UL 1363 and 1449 requirements.

The vertical power surge strip shall be constructed of aluminum or painted steel, designed to mount in cabinets and on relay racks, 48” height minimum, and have a minimum 10-foot cord length. The vertical power surge strip shall have a minimum of ten (10) outlets, evenly spaced the full length of the strip, 110 VAC, 15 amp, 60 Hz, protect normal and common modes 26,000/22,000 peak milliamps, 50-60 dB, clamping voltage 330/400 and meet UL 1363 and 1449 requirements.

The standard color for all rack accessories shall be black. In locations where an existing color exists, it shall continue to be followed unless otherwise instructed in writing by the OTM Project Manager.

3.2.3.6.3 CABINET FLOOR/WALL (Lines 6022-6037)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
Cabinet, 84” floor type	Hubbell No. HPW78CC19X30x

Cabinet, 48” floor type	Hubbell No. HPW48CC19X30x
Floor Cabinet Fan Unit	Hubbell No. HPWRFANxLN
Floor Cabinet Shelf	Hubbell No. MCCPSHLF
Cabinet, 24” wall type	Hubbell No. HW2426x
Cabinet, 48” wall type	Hubbell No. HW4826x
Wall Cabinet Fan Unit	Hubbell No. HWKF120
Cabinet, 32" wall type compact	Hubbell RE4 & (2) REKF & REKL

Cabinet units consist of the resources required to furnish/install ordered quantities (each) of various types of equipment cabinets, as applicable, as described below, and as required at project sites and as indicated in the drawing standards and/or specifications provided herein applying to these units.

Floor cabinets shall be constructed of painted plated 16 gauge steel, vented fan on top, knock-outs for cable access, open bottom, hinged doors with locks on front and back, and free-standing with adjustable/leveling feet, and locking casters available. Cabinets shall be equipped with grounding lugs used to common-bond the cabinet to the grounding system.

Floor cabinets shall be 24"W x 30"D x 48"H or 84" H, nominal, with internal adjustable equipment mounting bars front and rear, with dual sided TIA/EIA hole spacing to fit standard 19" rack mount devices. Exact locations for cabinets shall be designated by end-users.

Wall mount cabinets shall be 24"W x 24"D x 24"H or 48"H, nominal, painted 16 gauge steel, minimum, with single sided TIA/EIA hole spacing. Wall cabinets shall be vented with fan on top and vent on bottom, knock-outs for cable access on top and bottom and dual-hinged for front access to electronics and rear access to wire and cable. Both hinged access points shall be lockable. The cabinet shall be installed using factory-recommended anchor bolts to secure the cabinet to any type of wall and be equipped with grounding lugs used to common-bond the racks to the grounding system and other accessories, as applicable. Once installed, the cabinet shall be capable of supporting minimum 50 pounds of owner-provided hubs and equipment. Exact bolting locations for racks shall be designated by end-users.

Cabinet roof top fan for either floor or wall mount cabinets shall be minimum 225 CFM, 110 VAC, 60 Hz, UL listed and have an enclosed fan blade for safety.

Cabinet shelf shall have four corner supports, vented, and be capable of supporting 150 lbs., minimum.

Compact wall cabinet 24"x32"x10" shall be for use in office space without equipment rooms. The cabinet shall house up to four (4) rack mount patch panels and/or hubs. Cabinets shall be lockable.

The standard color for all floor cabinets shall be office white and wall cabinets shall be black. In locations where an existing color exists, it shall continue to be followed unless otherwise instructed in writing by the OTM Project Manager.

3.2.3.6.4 WIRE MANAGEMENT (Lines 6038-6053)

Acceptable product names/part numbers:

Description	Manufacturer / Part No.
Horizontal Management, Front Only	Panduit No. WMPHF2
Horizontal Management, Front Rungs	Ortronics No. OR-60400057
Horizontal Management, Front/Rear	Panduit No. WMPH2
Horizontal Management, Bar	Chatsworth No. 12176-701
Vertical Management, Front Only	Panduit No. WMPVF45
Vertical Management, Front/Rear	Panduit No. WMPV45
Vertical Support Bracket	B-Line No. SB580-06H
Fiber Management, Upper Tray	Chatsworth No. 12183-719
Fiber Management, Lower Tray	Chatsworth No. 12185-719
Fiber Management, Lower Double	Chatsworth No. 12187-719
Fiber Management, Transition Plate	Chatsworth No. 12186-701
Fiber Management, Central Routing	Ortronics No. OR-808045124-00

Wire Management units consist of the required resources to furnish/install ordered quantities (each) of wire management panels and apparatus for dressing of UTP or fiber patch cords, as required at project sites and indicated in the drawing standards and/or specifications provided herein applying to these units.

UTP wire management panels shall be suitable for frame/rack or wall-mounting between patch panels and feature plastic finger ducts with cover for routing cables/cords. Horizontal UTP management panels shall extend across the front of the rack channel to the vertical panels, be two rack spaces in height, and have integral bend radius control clips at each end. Horizontal management bars shall provide strain relief for cables entering the rear of patch panels and feature evenly spaced pre-drilled holes for attaching cable ties. Vertical management panels shall extend the full length of the rack and include any necessary hardware for side or center mounting between racks. Vertical support brackets shall be of steel or aluminum construction, have evenly spaced pre-drilled holes for cable ties, extend six inches perpendicular to rack channel, and be installed at a spacing of twelve inches apart.

Fiber management panels shall be suitable for frame/rack mounting and feature bend limiting characteristics in compliance with ANSI/TIA/EIA-568-B bend radius requirements. Horizontal jumper and transition trays shall be adjustable to allow for a smooth and unobstructed transition into horizontal management and neighboring racks.

The standard color for all wire management shall be black. In locations where an existing color exists, it shall continue to be followed unless otherwise instructed in writing by the OTM Project Manager.

3.2.3.6.5 CABLE TRAY (Lines 6054-6087)

Acceptable product names/part numbers:

Description	B-Line No.	Chatsworth No.
Ladder Rack 6" wide	SB-18-06-xx	10250-x06 & 10596-106
Ladder Rack 12" wide	SB-18-12-xx	10250-x12 & 10596-106

Description	Snake Tray No.
Continuous Flexible Tray 4-½"x 8'	CM 201-425-8

Description	G.S. Metals No.
2"x6"x10' Wire Mesh Basket Tray	FT2X6X10
2"x12"x10' Wire Mesh Basket Tray	FT2X12X10
4"x12"x10' Wire Mesh Basket Tray	FT4X12X10
4"x18"x10' Wire Mesh Basket Tray	FT4X18X10
4"x24"x10' Wire Mesh Basket Tray	FT4X24X10

Cable tray unit shall consist of the resources necessary to furnish and install a horizontal or vertical cable and/or rack support system in equipment rooms, closets, and building hallways above or below suspended ceilings.

Ladder-type cable tray shall be constructed of a single, rectangular metallic, tubular backbone with ribbed top rung design and black or gray baked enamel finish (or equivalent/enhancement). Tray shall be have twelve (12) inch maximum spacing between rungs, nominal, and six (6) or twelve (12) inch widths, nominal, as applicable. Each ordered length of tray shall be equipped with protective end caps. All ladder-type trays shall have retaining posts with a minimum height of 6" evenly spaced at a minimum of every 24".

All miscellaneous parts (wall, ceiling, or floor attachments, intersections, turnouts, accessories, and kits) to complete an installation **shall be inclusive** in the installation and shall be provided at no additional cost to the State.

When ordered, the following accessories shall be provided as applicable:

1. Splice kit containing material to butt-splice two (2) different segments of tray including all necessary fastening hardware.
   Chatsworth - P/N 11301-001
2. Junction kit containing material to T-junction two (2) different segments of tray including all necessary fastening hardware.
   Chatsworth - P/N 11302-001
3. Mounting-bolt kit containing two (2), 5/16"-18 x 2 1/4" J-bolts, nominal, with compatible hex nuts and split lock washers to attach tray to support brackets or building structural members.
   Chatsworth - P/N 11308-001
4. Ceiling kit containing material to suspend tray from ceilings including ceiling support bracket, 3/8"-16 x 6' threaded rod, runway support rod, I beam clamps and all necessary fastening hardware.
   Chatsworth - P/N 11310-001
5. Wall bracket kit containing the following: one (1), 2" x 2" Steel or aluminum angle bar bracket, nominal; two (2), 5/16"-18 x 2 1/4" J-bolts, nominal, with compatible hex nuts and lock washers to attach tray to bracket.
   Chatsworth - P/N 11421-x12
6. Triangular support bracket kit containing the following: vertical mounting bracket with runway and angle support channels; two (2), 5/16"-18 x 2 1/4" J-bolts, nominal, with compatible hex nuts and lock washers to attach tray to bracket.
   Chatsworth – P/N 11746-x12
7. Slotted galvanized strut. Strut unit shall include all necessary hardware for attaching to hardware, walls, or ceilings including but not limited to: bolts, washers, spring nuts, all thread, straps, and mounting brackets.
   Unistrut – P/N P1000-HS10PG

Continuous flexible cable tray support system stringer shall be hand flexible with no tools needed to bend cable support for a change in path direction. Cable support system shall be designed in such a way that cables may enter and exit the tray in any direction and may be installed and removed without making modification to the installed cable support system. The cable support system shall be made of a 5/16" cold rolled steel single spine with a yellow zinc dichromate coating of 18-20 µm or plastic coated steel mesh cable support system. The cable tray shall be strong enough to allow supports to wall, ceiling, etc. every 4 feet. All miscellaneous parts (wall, ceiling, or floor attachments or hangers, all-thread, nuts, bolts, and accessories) to complete an installation shall be inclusive in the installation and shall be provided at no additional cost to the State.

Wire mesh basket-type cable tray shall be constructed of a welded high strength carbon steel wire, formed into a basket-type channel. Basket tray shall have an electroplated zinc galvanized finish applied to an average thickness of 0.7 to 0.8 mils. Basket tray shall be field-fashionable and installed according to manufacturers' recommended installation procedures, ensuring a safe and finished edge at cuts. All miscellaneous parts (wall, ceiling, or floor attachments or hangers, all-thread, nuts, bolts, and accessories) to complete an installation shall be inclusive in the installation and shall be provided at no additional cost to the State.

3.2.3.7 LABOR AND SERVICE UNITS

Labor and service units shall consist of the resources required to furnish/provide ordered quantities (per hour) of various types labor and service as described below, as required at project sites and as indicated in the drawing standards and/or specifications provided herein applying to these units.

These units are used at the sole discretion of OTM, not the Contractor. Labor and service units shall only be used as a last resort. When standard unit items (per foot, per each) do not adequately cover the work required at a site, OTM shall determine if the application and use of the labor and service units are justified. If labor and service units are deemed necessary, OTM shall provide a written and detailed explanation of what shall be covered by the labor and service units.

3.2.3.7.1 LABORER (Line 7001)

Labor charge per hour for a laborer to perform general cleanup beyond the Contractor's normal responsibilities and non-skilled work with hand tools.

3.2.3.7.2 SPLICER (Line 7002)

Labor charge per hour for an experienced, qualified cable splicer to splice or clear and cap paired-wire.

3.2.3.7.3 CONDUIT WORKER (Line 7003)

Labor charge per hour for an experienced telecommunications conduit worker to install conduit.

3.2.3.7.4 INSIDE CABLE PLACER (Line 7004)

Labor charge per hour for an experienced, qualified inside-cable plant placer to lay cable in cable tray, suspend cable in ceiling space, or pull it in underfloor space, conduit, or raceway.

3.2.3.7.5 WIRE TECHNICIAN (Line 7005)

Labor charge per hour for an experienced, qualified wire technician to assemble distribution frames, terminate, troubleshoot, and/or test cable/wire.

3.2.3.7.6 FIBER TECHNICIAN (Line 7006)

Labor charge per hour for an experienced, qualified fiber optic cable splicer/technician to terminate, troubleshoot, and/or test fiber optic cables.

3.2.3.7.7 ABANDONED CABLE REMOVAL (Line 7007)

Labor charge per hour for a laborer to perform general removal and disposal of abandoned communications cable(s).

3.2.3.7.8 ENGINEERING (Line 7008)

Services in cost per hour for an experienced, qualified communications engineer to perform design and cost estimation of telecommunications cable/wire systems and related building or campus infrastructure and raceways.

3.2.3.7.9 DRAFTING (Line 7009)

Services in cost per hour for a draftsperson experienced in telecommunications cable/wire and related building facilities to support engineering, testing, and/or "as-installed" documentation.

3.2.3.7.10 CLERICAL (Line 7010)

Services in cost per hour for an office clerk experienced in typing telecommunications documents such as correspondence, test results, etc.

3.2.3.7.11 TROUBLE DETERMINATION, CALL OUT (Line 7011)

This unit consists of a one-time call out to dispatch a highly qualified and experienced technician/repairman to any state facility and a one hour minimum time on site. The technician shall be equipped with all the tools and test equipment necessary to trouble shoot communications cabling systems: UTP, STP, coax, and fiber optics.

3.2.3.7.12 TROUBLE DETERMINATION, EACH ADDED HOUR (Line 7012)

This unit consists of a highly qualified and experienced technician/repairman on premise at the state facility for each additional hour on site. The technician shall be equipped with all the tools and test equipment necessary to trouble shoot

communications cabling systems: UTP, STP, coax, and fiber optics. All additional trouble determination hours shall be approved in advance by OTM.

3.2.3.8 SPECIAL UNITS

3.2.3.8.1 SPECIAL PROJECT SURCHARGE, MATERIAL (Line 8001)

This unit shall consist of a percentage multiplier for certain material units that are required to be shipped overnight for a special project. This unit shall not be applied to all material items on a project, but only those material items that cannot be procured locally and require overnight shipment. The necessity of this unit shall be documented by the Contractor, agreed to by the state agency, and approved by OTM prior to its use. See Section 3.3.2.2.2 of this bid document.

This percentage shall not exceed 50%.

3.2.3.8.2 SPECIAL PROJECT SURCHARGE, AFTER HOURS LABOR (Line 8002)

This unit shall consist of a percentage multiplier for certain labor units in order to cover the cost of overtime labor rates on a special project. When the State requires a project to be done after normal business hours, the project shall be itemized utilizing the material and/or labor surcharges. The use of these surcharges shall only be used when it is documented as being necessary by the agency and approved by OTM. No work shall begin until the surcharges are approved by OTM. See Section 3.3.2.2.2 of this bid document.

This percentage shall not exceed 50%.

3.2.4 INSTALLATION SPECIFICATIONS

3.2.4.1 WORK AREA COMMUNICATIONS OUTLETS

All labeling shall be either typed or printed via mechanical means; hand written labels are not acceptable.

Voice/data/LAN work area jacks and inserts shall be connected to horizontal wiring and then mounted in either outlet boxes furnished and/or installed by resources other than this contract or new outlet boxes furnished and installed by this contract with appropriate faceplates as required by the user. Some jack installations shall require metal faceplates; the majority shall be colored plastic, as designated by end-users.

The faceplates shall be labeled with identification numbers, as required. The numbers shall reflect the room numbers in which they are installed. For rooms with multiple jacks, the faceplates shall be labeled alphanumerically. All ID numbers shall also appear on the HC/IC/MC terminal block terminations and/or patch panel ports.

The faceplates shall also be labeled according to function: VOICE, DATA, and/or LAN. Some applications may require further functional distinctions such as color coded jack/connector inserts: ivory for voice, orange for data, etc. See drawing #T-4.3.

3.2.4.2 WORK AREA OUTLET WIRING

A minimum of six (6) inches and a maximum of twelve (12) inches of horizontal wiring workstation cable slack shall be coiled in each outlet box. All cable pairs shall normally be terminated on the jack terminals unless the type of jack leaves spare pairs. The spare pairs shall be cleared/capped/tagged and the slack coiled in the outlet box for future use. NOTE: All horizontal wiring pairs shall be terminated at the HC/IC/MC end, including any spare pairs.

3.2.4.3 WORK AREA OUTLET CONVERSIONS

Modular adapters (harmonicas or splitters) for converting modular single port jacks to two (2)- through six (6)-port jacks shall be used for multi-line applications such as digital LSI's and other ancillary devices that function on "skinny" wire as well as "fat" wire conversions to "skinny" wire (reuse of 25 pair wire from old 1A2 key sets).

3.2.4.4 WORK AREA ANCILLARY DEVICE OUTLETS

Telco connectors (50 pin) such as for analog line status indicators (LSI's) or telephone system consoles shall be connected to dedicated horizontal wiring via outlet boxes/cable stub-outs with appropriate stub lengths (five (5) feet, minimum), and faceplates.

The connectors shall be twenty-five (25)-pair (fifty [50]-pin telco) female connectors for connection to the ancillary device's male counterpart (usually existing or provided by resources other than this contract).

In some applications, modular adapter type may be used for converting from fifty (50)-pin telco to six (6)-or eight (8)-pin modular. In other applications, adapters may be used to interconnect at demarcs and for computer equipment interfaces.

3.2.4.5 HORIZONTAL WIRING

Voice horizontal wiring shall consist of unshielded twisted pair cable as applicable, placed in concealing pathways (unless designated otherwise by the OTM Project Manager) from workstations to HC/IC/MC's. All cable pairs shall be terminated at the jacks at the workstation end and on 66 or 110-type cross-connect blocks, as applicable, on a backboard(s) or jack/patch panel(s) mounted on walls or on frame/racks at the HC/IC/MC end, as applicable.

Data/LAN horizontal wiring shall consist of coax or unshielded twisted pair cable(s), as applicable, placed in concealing pathways - unless designated otherwise by the OTM Project Manager - from workstations to HC/IC/MC's. All cable conductors shall be terminated on connectors/jacks at the workstation end and on 66 or 110-type cross-connect blocks on a backboard(s), jack/patch panel(s) or coaxial bulkhead panel(s) mounted on walls or on frame/rack at the HC/IC/MC end, as applicable.

Ancillary device horizontal wiring shall be 4-, 6-, 12-, 25-, 50-, or 100-pair inside wire type cable, as required for device size and type. The cable pairs shall be terminated at the workstation end with the required connectivity and connected to dedicated horizontal wiring via outlet boxes/faceplates/cable stub-outs with five (5) ft. stub length (minimum) and with 66 or 110-type connecting blocks, as applicable, on a backboard(s) mounted on walls or on frame/rack at the HC/IC/MC end, as applicable.

Horizontal wiring installed within buildings shall comply with the current requirements of the NEC Article 800 for fire/smoke-resistant cables preventing the spread of fire and smoke inter/intrafloor, i.e., CMR for general purpose, non-plenum, riser applications and CMP for plenum and/or riser applications.

3.2.4.6 HORIZONTAL WIRING CONNECTIONS IN TC/ER'S

Connecting blocks, connectors, and/or patch panels shall be provided to terminate every pair of UTP cable in telecommunications closets and equipment rooms, as required. All blocks and panels shall be indelibly and legibly marked to indicate the designated panel/field identifications, cable numbers, office/room number and pair numbers connected as per TIA/EIA, as required. All labeling shall be either typed or printed via mechanical means; hand written labels are not acceptable.

For the installation part of these units, only mounting on backboards, frames, racks, or patch panels shall be included, as applicable.

These units do not include the paired-wire jumpers required to cross-connect the workstation wiring to the line ports of a KSU, PBX, or central office service/network interface, nor do they include any cable pair terminations.

Cross-connects and terminations shall be performed using their individual units, respectively, as applicable.

3.2.4.7 BACKBOARDS

Telephone and other communications equipment backboards shall be arranged according to layouts as determined by the OTM Project Manager. All plywood backboards furnished and installed by this contract shall be painted (front, back, and sides) with two coats of fire-resistant, white paint or equivalently fireproofed paint in compliance with the State Fire Marshal's requirements. See drawing #T-3.1.

3.2.4.8 MAIN CROSS-CONNECT (MC)/INTERMEDIATE CROSS-CONNECT (IC)/HORIZONTAL CROSS-CONNECT (HC)

Equipment rooms (ER's) with entrance facilities (EF) shall be where building main cross-connects (MC's) are located. Equipment rooms without RF and telecommunications closets (TC's) shall be where IC's and/or HC's are located. MC's shall be fed via telco incoming service wiring and/or interbuilding backbone wiring.

IC's shall be fed via inter/intrabuilding backbone wiring distributed from building MC's.

Work areas shall be fed via horizontal wiring distributed from building HC's, IC's and/or MC's, as required.

Wiring pairs shall be terminated and cross-connected at each backboards(s) and/or frame/rack(s) with 66 or 110 type hardware, as applicable. See drawings #T-3.2 and T-3.3.

3.2.4.9 INTRABUILDING BACKBONE WIRING

Feeder/riser cables for voice applications linking TC's and ER's shall contain a minimum of one (1) pair per hundred (100) square feet of usable office space as per TIA/EIA specifications. Feeder/riser cables for data/LAN applications shall be installed in separate sheaths (UTP, Coax, or Fiber Optics), unless approved otherwise by the OTM Project Manager.

Feeder/riser cable installed within buildings shall comply with the current requirements of the NEC Article 800 for fire/smoke-resistant cables preventing the spread of fire and smoke from floor to floor, i.e., for general purpose, non-plenum, riser applications; CMP for plenum and/or riser applications. This code shall also govern any vertical, interfloor, and workstation cabling applications.

3.2.4.10 WIRING PATHWAY

All cable placed in accessible ceilings shall be supported from building structural members such as beams, joists, rafters, etc. such that the weight of the cable does not bear on ceiling panels and grid, electrical conduit, sprinkler lines, or HVAC ducts as per NEC 300-11A, 725-7, 800-6. All cables shall be neatly bundled and installed with their own support straps and hangers at five foot (5) intervals maximum. Cable/conduit runs shall follow building structural lines and be parallel and perpendicular to beams, joists, rafters, etc.

All cable installed indoors shall be placed on appropriate pathway(s) such as "J" Hooks, cable tray, conduit, duct, supported from/to building structures, wall cavities, surface raceway, etc, with labor/installation units, as applicable.

All cable runs not encased in metallic conduit or other raceways shall be placed at a safe distance from lighting ballasts, power transformers, electric motors, radio equipment, etc. such that EMI, RFI, or other forms of interference shall not cause signal/communication or other functional problems with the user's connected equipment.

In addition, Category 3, 5-E, and 6 UTP cable shall be placed in accordance with ANSI/TIA/EIA-568-B Commercial Building Telecommunications Wiring Standards (with supplements) to ensure performance compliance. Avoiding buckles and kinks, not exceeding a minimum bending radius, avoiding tight strapping/bundling, maintaining individual pair-twist rates throughout the terminations, ensuring cable and conductor insulations are not stripped back from terminations exceeding "568" limits, etc. are just a few of these placement standard specifications.

Shielded cable runs shall be placed so that shields are continuous from end-to-end or jumper bonded across in-line couplings/connections and grounded at the equipment room end.

3.2.4.11 INDOOR PLANT SPLICES

All splice closure sizes shall be determined by the total number of pairs of the cable(s) entering the closure as feed-in or feed-out, whichever is larger.

Splicing the cable pairs is not included with closure units. Splicing shall be performed using the splice units. Splices shall be fold back style to allow for future changes.

3.2.4.12 INTERBUILDING BACKBONE WIRING AND TERMINATIONS

Maintenance slack shall be provided at all pull locations such as enclosures/pull boxes, and building entrance facilities at MC's and IC's.

3.2.4.13 CABLE GROUNDING

All cable shields shall be bonded and grounded at each termination and splice point, as required. Any cable run of such length that may cause excessive surge voltage drops across the shield from end-to-end and/or line noise shall be modified by the Contractor to eliminate this condition at no extra charge.

All cable shields and protectors shall be grounded and common-bonded via #6 AWG grounding conductors (with green insulation) to the main power service entry ground grids as required by the ANSI/TIA/EIA-607, IEEE P1100, NEC and as specified herein.

Building utilities piping (gas, steam, water, etc.) and electrical conduit/boxes shall not be used for grounding connections. See drawing #T-3.1.

3.2.4.14 OPTICAL FIBER CABLE PLACEMENT

All indoor fiber optic cabling shall be done with tight buffered cable. Fiber optic cable shall normally be installed in flexible innerduct. The innerduct shall be pulled and supported in ceiling space in conduit, in cable tray, or strapped to structures, as applicable.

The applicable parts of subsections Horizontal Wiring, Horizontal Wiring Connections, Intrabuilding Backbone Wiring, Wiring Pathway, and Multiple Cable/Duct shall also apply toward fiber optic cable placement.

3.2.4.15 DARK FIBER

Some fiber optic cable installation shall be intended as "passive" fiber capable of supporting "active" electronics by others in the future. Therefore, all optical fibers shall be tested, certified, and documented according to subsection Tests and Documentation, provided herein, to ensure integrity and attenuation losses within equipment db budgets.

3.2.4.16 FO CABLE SPLICES

New optical fibers shall be continuous from building to building without splices, unless authorized by the OTM Project Manager. For repair work involving severed cables, fiber splice and splice case units, described and specified herein, shall be utilized for splicing purposes. All splices shall be enclosed.

3.2.4.17 OPTICAL FIBER TERMINATIONS

Fiber optic cables shall be terminated in patch panels or distribution cabinets utilizing connectors as per fiber termination units described and specified herein. Each optical fiber covering shall be color coded and labeled for ID. Consistent color codes and number sequences shall be used throughout each installation.

3.2.4.18 COAXIAL CABLE PLACEMENT

Coaxial cable installation may be required to be above-/underground in conduit, in ceilings/floors, in cable tray or other raceway, as applicable.

Each installation shall be provided with the appropriate type of cable for the application, for example, 75 ohm RG-6 for CATV, etc.

The applicable parts of subsections Horizontal Wiring, Horizontal Wiring Connections, Intrabuilding Backbone Wiring, Wiring Pathway, Outside Plant Splices, Multiple Cable/Duct and Grounding shall also apply toward coaxial type cable placement.

3.2.4.19 COAXIAL CABLE SPLICES

Coaxial type cabling shall be continuous from building to building without splices, unless authorized by the OTM Project Manager. For repair work involving severed cables, appropriate coupling and connectors shall be utilized for splicing purposes.

3.2.4.20 COAXIAL CABLE PROTECTORS AND TERMINATIONS

Interbuilding coaxial type cabling shall be terminated with surge protection as per coax protector units described and specified herein. Terminations shall be made with coax connectors using crimp-on type as required by the user. Each cable connection shall be labeled for identification.

3.3 EQUIPMENT/SERVICE PROVISION REQUIREMENTS

3.3.1 DELIVERY

On an installation project, the Contractor is responsible for all cable, equipment, and hardware until job completion and acceptance, and for providing or arranging suitable storage area/space that is secure from vandalism and protected from the elements.

On drop-ship material only, bills-of-lading from the supplier via the carrier shall be provided to the user-agency at the time of delivery. The Contractor shall assist the user-agency in reconciling bills-of-lading to agency release orders.

3.3.2 IMPLEMENTATION

3.3.2.1 INTERFACE WITH COMMON CARRIER

The Contractor shall be responsible for all arrangements to interconnect the system proposed to the Common Carrier system and shall coordinate all such arrangements with the OTM Project Manager.

3.3.2.2 CONTRACTOR SELECTION

3.3.2.2.1 BY STANDARD PROJECT

An estimated itemized project cost and written scope of work shall be forwarded to each Contractor along with the agency's desired start and completion dates. Each Contractor shall examine the information (and visit the site if needed at no additional cost to the State) in order to determine his estimated start and completion dates based on the scope of work, existing conditions at the site, manpower, material and weather conditions.

Upon supplying the project itemizations, OTM may require a site visit with all Contractors. However, each Contractor assumes the liability for visiting every project site. Each Contractor shall satisfy himself as to the nature, character, and location of each and every work site, the work to be performed, the general and local conditions, the character, quantity and quality of materials to be used, and the quantity and type of equipment, tools, manpower and facilities needed, preliminary to and during the execution of the work, and all other matters which in any way affect the work to be performed under this contract.

Each Contractor shall return his estimated timeframe to OTM. These times shall be in calendar days. The Contractor shall hold firm the start and completion times for fourteen (14) days after receipt by OTM of Contractor's estimate. OTM shall provide the information from all Contractors to the agency, and the agency shall select a Contractor. The selected Contractor, agency, and OTM shall meet and negotiate mutually agreeable start and completion dates. The negotiated interval shall not be shorter than the original Contractor estimated interval unless agreed to and offered by the Contractor and accepted by the agency. Once the start and completion dates are agreed to and an order is placed by the agency, the Contractor shall be held to the scheduled project completion date. Missed scheduled project completion dates may result in liquidated damages.

Agency requests for "materials only" itemizations shall not be forwarded to the Contractors for timeframe estimates as standard practice. However, the OTM Project Manager may elect to do so based on factors such as large quantities, known shortages of raw materials, or agency need.

3.3.2.2.2 BY SPECIAL PROJECT

Most projects issued to the Contractor fall into the category of the standard project. In certain instances, the very nature of the project shall demand special attention and shall be considered a special project. Special projects fall into two general types: emergency repairs and after-hours labor. The selection of a Contractor for emergency repairs shall be determined by OTM, taking into consideration factors such as the availability of the Contractor to provide the necessary repairs, response times, agency preference, and experienced technicians. Selection of a Contractor for special projects requiring after-hours labor shall follow the same process as a standard project.

Special projects shall be handled in the following manner:

1.) Emergency Repairs (Non-Warranty)

In these instances, the chosen Contractor shall be required to send a technician to a site to determine the nature and severity of a communications outage at a State facility. This outage may have been caused by an act of God, vehicular damage, or simply age and neglect. The technician shall determine as quickly as possible the cause of the outage and recommend to OTM a cost effective means of restoring the communications facility. This can range from something as simple as making a cable pair swap to a complex project replacing damaged facility and installing temporary facilities until the permanent project can be installed. The most highly trained and experienced technician shall be required for this type of assignment. In addition, he/she shall be required to have all the necessary test and diagnostic equipment (copper and/or fiber) to troubleshoot the cable plant in order to find and isolate the trouble as quickly as possible.

Minor Emergency Problems

If the trouble is found to be minor and can be fixed with materials on hand, the technician shall notify OTM of the nature of the problem, the estimated materials and labor to restore service, and the estimated restoration interval. Once the estimate has been approved by OTM, then (and only then) can the Contractor proceed with the repair. The Contractor shall invoice for this trouble determination by utilizing the Trouble Determination fees (call out and, if required, added hour) as outlined in Section 3.2.3.5. The actual repairs shall be invoiced using the standard material and labor units of this contract. After-hours repairs shall also utilize the applicable after hours surcharge.

Major Emergency Problems
If the damage is found to be major, the Contractor shall submit to OTM by the next business day an itemized cost estimate of material and labor units required to repair and replace the damaged facility and an estimated restoration interval. Once the estimate has been approved by OTM, then (and only then) may the Contractor proceed with the repair. The Contractor shall invoice for the trouble determination by utilizing the Trouble Determination fees (call out and if required added hour) as outlined in Section 3.2.3.5. The actual repairs shall be invoiced using the standard material and labor units of this contract. After-hours repairs shall also utilize the applicable after hours surcharge.

2.) After-Hours Labor

When the State requires a project to be done after normal business hours, the project shall be itemized utilizing the material and/or labor surcharges. The use of these surcharges shall only be used when it is documented as being necessary by the agency and approved by OTM. No work shall begin until the surcharges are approved by OTM.

The labor surcharges shall be utilized for the compensation for overtime labor for a special project. Only those labor units which require after normal business hours work shall be considered for the application of the labor surcharge.

The material surcharge shall be utilized for the overnight shipping of materials for a special project. Only those material units which cannot be procured locally and require overnight shipping in order not to delay the project shall be considered for the application of the material surcharge.

3.3.2.3 PRE-INSTALLATION

3.3.2.3.1 ORDER/CHANGE ORDER CONFIRMATION

Agencies shall send all orders to OTM to be reviewed for technical and contractual compliance. Upon completion, OTM shall stamp the compliant order with an OTM project number and forward it on to the appropriate Contractor.

Contractors shall not accept any orders directly from an agency. Contractors shall not proceed with work prior to orders being reviewed and stamped with a project number by OTM. Work performed on orders not displaying the OTM

stamp shall constitute a contract violation and shall receive a recommendation for non-payment. Contract violations shall be reported to the Office of State Purchasing and may result in enforcement of Section 6.2.11, Contract Controversies.

3.3.2.3.2 PROJECT CONSTRUCTION SCHEDULE

When requested by OTM on a per-project basis, the Contractor shall furnish to OTM a project construction schedule. The schedule shall include a written scope of work as well as a flow chart (milestone chart) depicting the orderly flow of construction with all major phases of construction noted thereon. This chart shall be expressed in actual dates and not general periods of time. The schedule shall be submitted to OTM at a scheduled status meeting but no later than seven (7) calendar days from the day the request was received from OTM.

3.3.2.3.3 PRE-INSTALLATION SITE CONSIDERATIONS

At no cost to the State, the Contractor shall meet on-site with the building manager (a list of building managers at State-owned buildings shall be provided to the Contractor after award of contract) prior to starting work on any and all projects in order to determine locations of fire walls and smoke partitions. The building manager shall provide the Contractor with information regarding the presence and location of asbestos, if applicable. Should asbestos be encountered during a wiring project, the Contractor shall immediately stop working in the asbestos environment and contact OTM.

3.3.3 INSTALLATION

3.3.3.1 PROJECT STATUS MEETING

The Contractor may be required to meet weekly at OTM for a project status meeting in order to discuss any and all current jobs in progress.

The Contractor shall maintain a database of all State work (See Section 6.2.7). The Contractor's point of contact shall be prepared to attend a status meeting at OTM's office. This meeting shall be for the purpose of supplying OTM with a progress report containing the information from the database referenced above.

3.3.3.2 INSTALLATION INTERVAL

The State desires the shortest installation intervals possible. The bidder should provide a narrative of his solution to the State's desire on the appropriate form in Section 7. The bidder should indicate his typical installation intervals for varying types of projects and under what conditions he can provide the shortest installation intervals. The bidders are encouraged to provide examples where

they have accomplished this feat in the past for other clients and end users. Bidders should provide contact names and telephone numbers for evaluation purposes.

3.3.3.3 SITE RESTORATION

The Contractor shall be responsible for restoring the worksite to its original condition.

3.3.3.4 TEST REQUIREMENTS

3.3.3.4.1 GENERAL

Testing is required on any and all cables and wires installed from this contract. All testing shall be performed by technicians who are certified to perform the required test(s). OTM may request copies of the technician's test training certificates prior to testing on certain projects.

All wiring and associated equipment/hardware provided from this contract shall be tested and documented by the Contractor at no cost to the State.

Occasionally "special" tests may be ordered that exceed "standard" tests as specified herein.

The Contractor shall allow the OTM Project Manager to perform some testing before project completion and/or prescribe (within limits of normal tests as outlined below) the testing methods, procedures, and inspections associated with such activities.

Testing may have to be performed in the presence of the OTM Project Manager. Sufficient advance notification of test dates shall be given by the Contractor to the OTM Project Manager. The Contractor shall coordinate the test schedule through the OTM Project Manager.

The Contractor shall record on the test-results-documentation, the nature of the defect for each conductor or pair found to be defective, as well as any other characteristic or test not meeting specifications provided herein. The Contractor shall use the test forms supplied in Section 8 of this bid document.

In order for any installed paired-wire cable to be considered acceptable, the number of defective pairs shall be limited to a maximum of 1% of the total number of pairs per cable and a maximum of 2 pairs per 25 pair binder group.

Any cable exceeding the above limits, as well as other limits specified below, shall not be accepted ensuring that all active electronics equipment (by others) shall function normally.

The Contractor shall, at no cost to the user-agency, perform standard testing as specified herein and certify all installed cable/wire/hardware/passive-equipment, ensuring that all active electronic equipment (by others) shall function normally. Substandard materials, work, and/or tests shall not be accepted.

3.3.3.4.2 STANDARD TESTS FOR INDOOR PAIRED WIRE & CABLE

This test procedure shall demonstrate, as a minimum:

1. Continuity of each conductor from end-to-end -- open test (more than 2,600 Ohms shall be considered an open).

2. Shorted conductors with other conductors -- short test (60,000 Ohms or less shall be considered a short)

3. Proper polarity of paired conductors from end-to-end - reverse test (for correct tip and ring terminations).

4. Proper termination of wire pairs from end-to-end -- cross test (for splits and other wrong terminations).

5. Proper ground and shield bonding (for shielded cables only) -- effective ground test (for common/same-potential bonding).

6. Grounded conductors (for all cables) -- ground fault test (60,000 Ohms or less to ground shall be considered faulted).

7. Detection of AC or DC power on any conductor -- power fault test.

8. User Agency's equipment shall function normally when connected to the installed wiring.

Tests shall be conducted utilizing an ITC TEST-ALL-25 or equivalent test instrument.

3.3.3.4.3 SPECIAL ON-REEL TESTS

If deemed necessary by the OTM Project Manager, some cable may have to be tested before installation because of reel/cable damages. These tests shall consist of conductor continuity, shorts, and insulation resistance as outlined above and attenuation as outlined below. These tests shall be performed at no

cost to the user agency. If a fiber optic cable reel is damaged, then an OTDR test shall be made utilizing bare fiber adapters.

Before performing these tests, the OTM Project Manager shall be notified by the Contractor upon arrival of the cable on-site and prior to the start of installation.

If any cable or wire is found to be defective, it shall be replaced by the Contractor at no cost to the State.

3.3.3.4.4 FIBER OPTIC CABLE PLANT

The Contractor shall test, certify, and document each fiber optic conductor to meet the following attenuation specifications:

1. Power Meter Test: (Cable length per 1000 ft. X 1.22) + connector loss + splice loss = acceptable loss in dB @ 850 nm, nominal. End-to-end testing shall include all connectors and jumper cables. The total end-to-end dB loss of a cable link, including connectors and splices (if approved by the OTM Project Manager), shall not exceed the power budget of active electronics equipment provided by others. An electronic copy of the documented test results for each fiber strand shall be presented to the OTM Project Manager and to the user-agency in a spreadsheet or Portable Document Format (PDF).

2. OTDR Test: The Contractor shall furnish and connect an optical time domain reflectometer (OTDR) to each fiber strand in each run of fiber and plot the resulting dB loss graph when tested at 850 nm and/or 1300 nm, nominal, for multi-mode cable and 1310 nm and/or 1550 nm for single-mode cable, as applicable. An electronic copy of the OTDR graphs and test results for each fiber strand shall be presented to the OTM Project Manager and to the user-agency in Portable Document Format (PDF).

   Fiber terminations made on-site shall be of factory quality and tested for attenuation loss not to exceed .5 dB per mated connection for ST, .5 dB per mated connection for SC, and .5 dB per mated connection (single link) for MT-RJ. Fiber technician certification shall be submitted to the OTM Project Manager with the fiber test documentation.

   Fiber fusion splices made on-site shall be of factory quality and tested for attenuation loss not to exceed .1 dB when measured in accordance with ANSI/TIA/EIA–455-A.

3.3.3.4.5 COAXIAL CABLE PLANT

Standard Test: The Contractor shall test and document each coaxial type cable provided from this contract and verify adherence to attenuation specifications and insulation integrity of the manufacturer, and functionally required by the user-agency.

Coax Testing (Pass or Fail Criteria)

1. Sum of center conductor and shield resistance shall not exceed 0.01 Ohm/meter.

2. Sum of the center conductor, connectors, and shield resistance shall not exceed 5 Ohms total per segment.

3. Minimum DC resistance between grounding conductor and disconnected segment shall be 2.5 kOhms.

4. Maximum potential difference between network ground reference and electrical service entrance ground shall not exceed 1 VAC.

5. Maximum DC resistance between network ground reference and coaxial segment shall not exceed 2.5 Ohms.

6. Maximum DC resistance between network ground reference and electrical service entrance ground shall not exceed 10 Ohms.

7. Maximum TDR return loss shall not exceed 25 dB down at any point, and not exceed lengths as specified by the application.

3.3.3.4.6 UTP DATA STATION CABLE

All UTP data station and riser cables and associated connection hardware shall be tested to certify the performance category of the permanent link as installed. All Category 3, 5, 5-E, or 6 station cables shall be tested in accordance with procedures laid out in ANSI/TIA/EIA-568-B for the permanent link. Test results for each cable shall include all of the primary field test parameter results. Any cable that fails testing shall be reported along with the procedures used to rectify the failure (i.e., replaced cable, re-terminated the jack, etc.). The Contractor shall utilize a test instrument with a minimum ANSI/TIA/EIA-568-B Level IIE compliance for CAT-3 and CAT-5E, and ANSI/TIA/EIA-568-B Level III compliance for CAT-6. Electronic results for each UTP Category 3, 5-E, or 6, four or 25 pair cable, shall be submitted to the OTM Project Manager and to the user-agency in Portable Document Format (PDF) as a part of the Contractor's as-built project documentation records. In addition to the above information, the documentation shall include a pass/fail indication for the specified cable, the test date, the serial number and software version of the scanner used, and a copy

of the calibration certificate of the scanner. If the Contractor requires additional information concerning the testing requirements, refer to ANSI/TIA/EIA-568-B.

3.3.3.5 EXECUTION OF WORK

The Contractor shall provide a sufficient number of personnel, including all subcontractors, who possess the vital experience and skills necessary to perform the contracted work and shall not arbitrarily remove skilled and experienced personnel from any State project during the term of the contract and any renewals. Contractor personnel changes that adversely impact the work in any manner may be cause for cancellation of the contract for default.

OTM reserves the right to request resumes and training certificates of technicians/workers who should possess higher skills required for complex tasks (i.e., copper and fiber splicers, repair technicians) at any time during the term of the contract. If an employee's credentials are deemed to be insufficient, resumes and certificates for other employees shall be submitted for review and approval. OTM reserves the right to refuse or remove any employee from State projects at any time during the course of the contract with due cause. This shall also apply to any and all sub-contractors utilized by the Contractor(s).

The work shall be executed in a satisfactory and workmanlike manner and at a rate of progress sufficient to ensure completion within the contract period. OTM may inspect the work's preparation, progress, and manner of execution. The Contractor shall provide to the OTM Project Manager the name of a job site superintendent who shall work with the OTM Project Manager to remedy any problems.

3.3.4 SYSTEM CUTOVER

3.3.4.1 CONDITIONS REQUIRED FOR OTM TO ACKNOWLEDGE CUTOVER COMPLETION

3.3.4.1.1 PROJECT COMPLETION

Project completion shall be the date on which all of the following have been successfully completed:

- The Contractor has submitted written confirmation to the OTM Project Manager all items on the written order have been delivered and/or installed, service is functional to the agency, and that the project has been completed on or before the scheduled project completion date. (See Section 3.3.2.2.1).

- Testing has been completed and test documentation has been reviewed by the Contractor to verify that test results are not substandard and are in compliance with Section 3.3.3.4.
- All documentation has been delivered (See Section 3.6).
- Project has been inspected by Contractor's quality control staff and there are no remaining incomplete Contractor punch list items.

Failure to complete all of the above conditions by the scheduled project completion date may result in the application of liquidated damages for delay.

3.3.4.1.2 INSPECTION AND PUNCH LIST DEVELOPMENT

The Contractor shall notify the OTM Project Manager when the order has been installed and inspected by the Contractor's own quality control staff. OTM shall randomly inspect order installations. Items failing inspection shall be reported in writing by the OTM Project Manager to the Contractor. These items shall be known as the project "punch list."

3.3.4.1.3 CORRECTION OF PUNCH LIST ITEMS

The Contractor shall correct all punch list items. After all punch list items have been corrected, the Contractor shall request a second inspection. The project shall not be accepted until all punch list items have been corrected.

If the Contractor fails to correct any punch list item within thirty (30) calendar days past the scheduled project completion date, OTM reserves the right to have the work completed by a third party. The full cost of having the work completed by a third party shall be deducted from payment to the Contractor. See Section 6.2.13.4.

3.3.5 BLANK

3.3.6 ACCEPTANCE DATE

The day upon which all of the conditions outlined in Section 3.3.4 have been completed shall be known as the acceptance date, and warranty shall begin. In no case shall the acceptance date be later than thirty (30) days after the scheduled project completion date. The OTM Project Manager shall acknowledge in writing the date of acceptance. **The Contractor shall not submit an invoice for final payment until after the date of acceptance.**

3.4 BLANK

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3.6 DOCUMENTATION REQUIREMENTS

3.6.1 TEST DOCUMENTATION

An electronic copy of the cabling system test documentation shall be required on all projects. The documentation shall be submitted in Portable Document Format (PDF), Excel, or Word as applicable. Other formats requiring the use of proprietary software for viewing shall not be permissible. Media used for transporting the documentation shall be CD-R, Zip disk, or email as required by OTM or the user-agency.

One (1) copy of the test documentation and summary report shall be provided to the OTM Project Manager.

One (1) printed hard copy of all test documentation shall be required upon request of the OTM Project Manager.

Upon request by the OTM Project Manager, the Contractor shall submit a copy of the factory test documentation sheet(s) of cable proposed for use before work commences on each project.

3.6.2 DRAWINGS AND RECORDS

On some projects, a drawing may not be provided by OTM. If OTM does not provide a drawing to the Contractor, then no "as built" shall be required from the Contractor.

On other projects, a building/campus project layout shall be provided to the Contractor with all pull locations and telephone closets marked thereon. Upon completion of the project when a project layout is provided, the Contractor shall provide two (2) marked-up hard copies of the layout as part of the project documentation along with the cable test results at no cost to the agency. The marked-up layout shall indicate "as built" project information and the "as built" position of cable and infrastructure in the project.

On projects costing $50,000 or more, or when drawings are ordered by the user-agency, the Contractor shall provide three (3) complete sets of installed wiring drawings and records to the OTM Project Manager at the completion of such projects. The Contractor shall utilize drafting and clerical units to bill for these drawings. The drawings shall consist of one (1) set of reproducible originals and two (2) sets of prints (hard copies). The cable pair assignment records shall consist of three (3) sets of 8½ x 11 typed text. The documents to be submitted shall include but not be limited to:

1. Drawings showing cable routing, splices, closure locations, pair counts and cable numbers.

2. Building entrance locations and details.

3. Locations and details of all cable terminations.

4. End-to-end test results as specified herein.

5. Pair or fiber numbers -- activated and spare (cleared/capped) and color coded.

6. MC/IC/TC drawings showing frame layout, terminal blocks, terminations, and cross-connect designations.

7. Cable pair assignment record.

4.0 PRICING SPECIFICATIONS

4.1 PRICING SPECIFIC TO THE BID DOCUMENT

4.1.1 GENERAL

The bidder shall provide a price for each item listed in a region in order to be considered for award in the region. Failure to bid all items in a region shall result in rejection of the bid response. The State desires that bidders bid as many regions as possible.

All prices quoted shall be FOB agency. All prices quoted shall include a minimum of a one year warranty. All prices quoted shall be for delivery in the region designated on the price page. (See map/list in Section 8 for parishes in each region).

For each region bid, the bidder shall provide a list of unit prices for all material items that are listed in Section 7 and as defined in Section 3.2.3. The material prices shall include the item material and any incidental materials and hardware necessary to make a complete and functional unit. This shall necessitate loading material pricing for items such as tape, tywraps, screws, anchor bolts, consumables, labels, cable/conduit supports, and **waste** cable/wire lengths in the unit.

For each region, the bidder shall provide a list of unit prices for all labor items that are listed in Section 7 and as defined in Section 3.2.3. The labor prices shall include the item labor to install the item itself and any incidental labor necessary to make a complete and functional unit. This shall necessitate loading

labor pricing for items such as labeling, dress up (tape and ty-wraps), testing, documentation, moving and/or covering furniture, opening and closing ceilings, and cleanup in the unit.

For each region, the bidder shall provide a list of unit prices for all Labor and Service Units as listed in Section 7 and defined in Section 3.2.3.7. These labor and service prices shall be for hourly rates for use by OTM and the user agency only in instances where a project's scope is of such a nature that it cannot be defined by the "per foot or each" units. On a project where these units shall be required, the Contractor and the OTM Project Manager shall meet in advance to define the work to be done and the quantity and type of labor and service units to be included on the project.

Labor time, such as travel to and from the site, setup and tear down time, pre-survey, underground utility locates, and reasonable delays from working in occupied (office, hospital and prison) environments are considered by OTM to be Contractor overhead and shall not be itemized in a project. The bidder shall figure his pricing of all labor units in Section 7 with adequate allowances for his labor overhead.

The bidder shall provide a list of percentages for the Miscellaneous Units listed at the end of Section 7 and defined in Section 3.2.3.6. These percentages shall be for special projects requiring materials to be expedited and/or after hours labor.

4.1.2 MULTIPLE CABLE/DUCT

Some pricing sheets may require one price quote for material and two separate price quotes for cable and/or innerduct installation. The two prices shall be based upon one price for each foot of such cable or duct installed individually and another price for each foot of such cable and/or duct installed in multiple. Application of these units and associated prices shall be performed as follows:

1. Any cable or duct placed individually (single run) shall be ordered and invoiced using the single run installation price.

In the following example, a single 100 pair cable is pulled 100' in an existing conduit.

	Qty.	Unit$	Extd. $
Example:			
Cable outdoor 100 pair, material	100'	1.00	100.00
Cable outdoor 100 pair, single install	100'	1.00	100.00
Cable outdoor 100 pair, multi install		.75	

2. Any cable and/or duct installed simultaneously shall be ordered and invoiced using the total material price and the total installation price, but at the multi install price. For the purpose of the bidder calculating his bid price for the multi installation, the maximum quantity pulled in a conduit or to a faceplate shall be four (4), the minimum shall be two (2), and the average shall be three (3). Since this contract is priced by the foot for all items, it is OTM's desire to receive a lower unit cost per foot for the multi installation bid price due to economics of scale. Set up costs remain relatively stable whether a Contractor is pulling one cable/duct at a time or several at a time.

In the following example, three (3) 100 pair cable are pulled simultaneously in an existing conduit 100' long.

	Qty.	Unit$	Extd. $
Example:			
Cable outdoor 100 pair, material	300'	1.00	300.00
Cable outdoor 100 pair, single install		1.00	
Cable outdoor 100 pair, multi install	300'	.75	225.00

In the following example, one 100 pair cable and two innderducts are pulled simultaneously in an existing conduit 100' long.

	Qty.	Unit$	Extd. $
Example:			
Cable outdoor 100 pair, material	100'	1.00	100.00
Cable outdoor 100 pair, single install		1.00	
Cable outdoor 100 pair, multi install	100'	.75	75.00

	Qty.	Unit$	Extd. $
Innerduct 1" outdoor, material	200'	.25	50.00
Innerduct 1" outdoor, single install		.75	
Innerduct 1" outdoor, multi install	200'	.50	100.00

4.2 MISSING PRICE

All prices shall be quoted in accordance with Section 4.1, Pricing Specific to the Bid Document. Items are listed separately on forms in Section 7 in order for the State to be able to purchase each item separately. Any item left blank, marked N/A or N/C, or marked as zero cost to the State shall be considered to be offered to the State at no charge. If the Contractor agrees in writing before award to provide the item at no cost, the Contractor shall be required to supply this item to the State at no cost whenever ordered during the entire term of the contract and any renewal terms.

If it is determined that an item has been manufacturer-discontinued or is otherwise not available, then the item shall be deleted from consideration and not awarded.

4.3 BLANK

4.4 BLANK

4.5 ESCALATION CLAUSE

Unit prices for equipment shall be reviewed annually and adjusted according to the Producers Price Index (PPI), Communications category, and shall be capped at an amount not to exceed 4% per year. The Contractor shall notify the State of proposed price adjustments ninety days before the contract anniversary date to be effective upon the contract anniversary date. All price adjustments shall be subject to the approval of the Office of Telecommunications Management and the Office of State Purchasing. Increases shall not apply to any orders issued prior to the contract anniversary date.

5.0 EVALUATION AND AWARD

5.1 GENERAL

5.1.1 NO AWARD

The State reserves the right to cancel the bid document and not award to any bidder.

5.1.2 ADDITIONAL INFORMATION

The State reserves the right to require additional information from bidders and to conduct necessary investigations to determine responsibility of bidders or to determine accuracy of bid response information. If additional information is requested, the bidder shall furnish it within the State's stipulated deadline. Failure to do so shall result in rejection of the bid response.

5.2 CRITERIA

5.2.1 ADMINISTRATIVE AND TECHNICAL COMPLIANCE

All bid responses received as a result of this bid document shall be subject to review for the purposes of selecting a bidder to whom a contract shall be awarded. No information shall be given out concerning the ultimate outcome while consideration of the award is in progress.

The successful bidder(s) shall meet all mandatory administrative and technical requirements.

5.2.2 SPECIFIC CRITERIA (WEIGHTED)

Cost. The maximum number of points by region that shall be awarded for this criterion is sixty (60). The maximum points for this criterion shall be awarded to the bidder(s) who bids the lowest total cost per region.

Service Offering. Bidders who are found to be technically and administratively compliant shall be assigned points in the Service Offering category. Points shall be assigned based on how well the bidder's service offering meets or exceeds the stated desirable features/functions, the State's perceived value of the service offering, and how well the bidder's overall service offering compares to the service offerings of other bidders eligible to receive points in this category.

The maximum number of points per region that may be awarded for this criteria is forty (40). It is possible that no bidder may receive the maximum number of points.

5.2.3 SIMULTANEOUS REVIEW

The functions described in this section may be performed simultaneously or in any order. Once a determination is made that a bid response is non-compliant in any area, that bid response shall be disqualified from further consideration.

5.3 METHODOLOGY

5.3.1 MODEL

Cost shall be calculated by multiplying the unit price for each item listed in the model by the model quantity to obtain a total item cost. All item costs shall be added to obtain a total cost. The formula described below shall be applied to determine the points assigned to the bidder's total cost. These points shall be added to the points assigned in the Service Offering criteria to determine a total point score for each bid response remaining in contention. The actual evaluation model shall be submitted in a sealed envelope to the Office of State Purchasing prior to bid opening. This model shall become part of the file and shall be available to all bidders after bid opening.

5.3.2 FORMULAS

This formula shall be used for determining the points for cost.

The lowest bid price, PI, shall be awarded a score equal to the maximum points for cost.

All other bids, Pi, i = 2,3,….N, where N is the total number of bid responses and where MP is the maximum points for the category, shall be scored as follows:

Example: Score of Bid I = $\frac{PI}{Pi} \times MP$

Vendor 1 Lowest bid $_50,000_____ = PI
Vendor 2 bid $_53,000_____ = Pi
_____60_____ = MP

$\frac{\text{(Vendor 1) \$ 50,000}}{\text{(Vendor 2) \$_53,000\_\_\_\_\_}} \times 60 \text{ (MP)} = 56.60$

5.3.3 EMPIRICAL DATA

Quantities listed in Section 8 are based upon actual previous yearly usage. A quantity of zero (0) indicates that none were purchased. "New" indicates that the item is new and is being added to this contract. This data is for informational purposes only.

5.4 OTM RECOMMENDATION FOR AWARD

5.4.1 DETERMINATION OF SUCCESSFUL BIDDER

A recommendation for award shall be made for up to three (3) bidders per region who receive the highest rankings in point allocation and who meet all mandatory administrative and technical requirements.

5.4.2 WRITTEN RECOMMENDATION FOR AWARD

When OTM has completed the evaluation and a successful bidder(s) has been determined, a written recommendation for award shall be forwarded to the Office of State Purchasing for review.

5.5 AWARD

The Office of State Purchasing shall issue a Notice of Award to the successful bidder(s).

6.0 CONTRACTUAL TERMS AND CONDITIONS

6.1 GENERAL TERMS AND CONDITIONS

6.1.1 TAXES

Bidders should be aware that any taxes levied upon the selected bidder or his equipment shall be paid in accordance with current tax laws in effect at the time of the purchase by the State. Selected bidders shall pay all other taxes or assessments, however designated, imposed or levied in connection with this contract and shall be solely responsible for remitting such taxes or assessments to the appropriate taxing or collection agency.

6.1.2 COMPLIANCE WITH LAWS, REGULATIONS, CODES, AND ORDINANCES

The selected bidder shall comply with all applicable provisions of federal and state statutes, laws, and regulations; parish and city codes or ordinances, specifically the National Electrical Code, Part 68 of the Federal Communications Commission's Rules and Regulations, tariffs or the Louisiana Public Service Commission, and all Louisiana laws and regulations regarding procurement including Louisiana Revised Statute 37:2163. The selected bidder shall be responsible for all licenses, permits, and inspection fees required.

6.1.3 CONTRACTOR RESPONSIBILITIES

The Contractor assumes responsibility for all items and/or services offered in his bid response whether or not the Contractor produces or provides them. Further, the State shall consider the Contractor to be the sole point of contact with regard to contractual matters, including payment of any and all charges resulting from the contract.

6.1.4 APPLICABLE LAW

The contract shall be governed by and interpreted in accordance with the laws of the State of Louisiana. Venue of any action brought with regard to this contract shall be in the Nineteenth Judicial District Court, parish of East Baton Rouge, State of Louisiana.

6.1.5 MOST FAVORED CUSTOMER CLAUSE

The parties agree that the State is entitled to receive from the Contractor more favorable pricing, terms, and conditions if during the term(s) of this contract the Contractor generally makes such more favorable pricing, terms, and conditions available to other similarly sized and similarly situated customers in the United States, in similarly sized and similarly situated contracts utilizing like services, volumes, and access costs. Accordingly, if during the term of the contract,

either the State or the Contractor becomes aware that the Contractor has generally made available to other similarly sized and similarly situated customers in the United States, in similarly sized and similarly situated contracts utilizing like services, volumes, and access costs, more favorable prices, terms, or conditions, such more favorable prices, terms, or conditions shall be made available to the State.

6.1.6 BID DOCUMENT AND BID RESPONSE INCORPORATED BY REFERENCE

The provisions of the selected bid response and this bid document with all addenda shall be incorporated by reference in the contract.

6.1.7 ORDER OF PRECEDENCE

In the event of ambiguity in the specifications, the order of precedence shall be the contract, the bid document, and the bid response.

6.1.8 GOOD FAITH NEGOTIATIONS

It is expected that both parties shall make reasonable efforts in an attempt to negotiate a contract. If it is determined that either party is not acting in good faith, contract negotiations shall cease.

6.1.9 FORCE MAJEURE

Contractor shall have no liability for delays, failure in performance, loss or damage due to earthquake, volcanic action, flood, lightning, the elements of war, civil or military disturbances, acts of God, or other causes beyond Contractor's control.

6.1.10 WAIVER CLAUSE

Waiver of any breach of any term or condition of this contract shall not be deemed a waiver of any prior or subsequent breach. No term or condition of this contract shall be held to be waived, modified, or deleted except by the written consent of both parties.

6.1.11 SEVERABILITY

If any term or condition of this contract or the application thereof is held invalid, such invalidity shall not affect other terms, conditions or applications which can be given effect without the invalid term, condition or application; to this end, the terms and conditions of this contract are declared severable.

6.1.12 HEADINGS AND SECTION REFERENCES

The headings given to the paragraphs herein are inserted only for convenience and are in no way to be construed as part of this contract or as a limitation of the scope of the particular paragraph to which the heading refers.

6.1.13 RIGHT TO AUDIT

The State Legislative auditor, federal auditors and internal auditors of the Division of Administration, or others so designated by the DOA, shall have the option to audit all accounts directly pertaining to the contract for a period of five (5) years from the date of the last payment made under this contract or as required by applicable State and Federal law. Records shall be made available during normal working hours for this purpose.

6.2 CONTRACT ADMINISTRATION

6.2.1 CONTRACT TERM

The initial contract shall be for a thirty-six (36) month period from date of award.

6.2.2 RENEWAL TERM

Upon acceptance by the Contractor and approval by the State, this contract may be renewed for two (2) additional twelve (12) month periods.

6.2.3 ORDERS

Written orders shall be issued by the acquiring agency and sent to OTM for review of technical and contractual compliance and project number assignment. See Section 3.3.2.3.1.

Any project valued at $50,000 or more shall result in issuance of a subordinate contract and the required filing with Clerk of Court in the parish where the work is performed.

All order quantities are estimates by user-agency, OTM, or the Contractor and are subject to change based on actual installed quantities. The selected Contractor shall be responsible for determining and satisfying himself with the exact quantities before ordering any specific units or non-standard lengths that may be itemized on the written order. The Contractor shall verify true lengths to his satisfaction at site prior to ordering materials. The State shall not be responsible for excess/unusable lengths of cable or quantities of material ordered and/or cut prior to notifying OTM of a discrepancy in the estimate. Prior

written approval shall be obtained before ordering or installation of increased or altered estimates.

Written orders for quasi-state agencies and political subdivisions such as local and parish government agencies shall not be reviewed and processed by OTM. The Contractor shall accept orders directly from these agencies. It is the responsibility of the Contractor to verify type of agency.

6.2.4 CHANGE ORDERS

Modifications to an initial order shall be made in writing by the acquiring agency and sent to OTM for review of technical compliance and project number assignment and shall be known as a change order. Work done by a Contractor without a written change order may result in non-payment for non-authorized work. See Section 3.3.2.3.1.

6.2.5 INVOICING

Invoices shall reflect actual quantities of materials installed and labor units utilized. The methodology for verifying actual wire/cable lengths installed shall be:

1. All copper cables – manufacturer's sequential marking on cable sheath.
2. All fiber optic cables – manufacturer's sequential marking on cable sheath.
3. All EMT/RGS/PVC conduits – wheeled footage or sequential tape reading.
4. All innerduct and roll pipe conduits – manufacturer's sequential marking on duct sheath or sequential tape reading.
5. Directional bores – sequential tape reading.

The methodology shall be used throughout the term of this contract and shall not vary from project to project without written approval from the OTM Project Manager.

All invoices shall be itemized in the same units and at the same rates or prices as bid by the Contractor.

Invoices shall reference the written order or ticket number plus the OTM number as applicable, and shall be itemized with item numbers, contract numbers, item descriptions, quantities, and prices as indicated on the written order. Invoices which do not comply shall be returned to the Contractor. The project shall be completed in compliance with Section 3.3.6 **prior** to submitting a final invoice to OTM for review.

The Contractor shall not submit final invoices to OTM which are dated **prior** to the acceptance date. Invoices received which bear incorrect dates shall be returned to the Contractor.

The Contractor shall submit final itemizations to OTM for reconciliation and approval. After receiving approval of final itemization from OTM, the Contractor shall submit the invoice to OTM to be reviewed for technical and contractual compliance. Upon completion, OTM shall forward the invoice and approved itemization to the agency for payment. The Contractor shall not submit an invoice directly to the using agency unless OTM specifically authorizes the Contractor to do so after the final itemization has been approved by OTM.

Invoices for quasi-state agencies and political subdivisions shall be mailed directly to the acquiring agency.

6.2.6 PAYMENTS

The acquiring agency shall be responsible for payment.

6.2.6.1 PROGRESS PAYMENTS

Progress payment may be made on contracts which extend beyond thirty (30) days. In no event shall such payments exceed the amount of work completed and the materials delivered and properly stored on location based upon the following limitations:

(A) Work Completed and Materials Delivered - Not more than sixty percent (60%) of total contract shall be paid as progress payments for work completed and material delivered. Not more than fifty percent (50%) of total contract shall be paid for material only.

(B) Project Completion - Seventy-five percent (75%) of total contract may be paid after project completion (see Section 3.3.4.1). The exact percentage of payment may be less based upon the value of items on the punch list (See Section 6.2.13.4)

(C) Acceptance Date – Up to 100%, less any liquidated damages and/or punch list items, may be paid to the Contractor after the acceptance date. Up to ninety percent (90%), less any liquidated damages and/or punch list items, may be paid to the Contractor for projects totaling $50,000 or more, after the acceptance date.

(D) Final Payment - Final payment shall be made when a clear lien certificate is received for projects totaling $50,000 or more.

6.2.7 REPORTS

The Contractor may be required to present a weekly progress report to OTM. This report shall be from a database maintained by the Contractor on all State orders received from OTM. This database shall contain fields for, but not be limited to: the agency name, order number, OTM number as applicable, Contractor's job number, order amount, order confirmation date, scheduled project completion date, actual start date, actual completion date, invoice date, Contractor Superintendent, and OTM Project Manager.

6.2.8 BLANK

6.2.9 TERMINATION

6.2.9.1 TERMINATION FOR CAUSE

State may terminate this contract for cause based upon the failure of Contractor to comply with the terms and/or conditions of the contract provided that the State shall give the Contractor written notice specifying the Contractor's failure. If within thirty (30) days after receipt of such notice, the Contractor shall not have either corrected such failure or, in the case of failure which cannot be corrected in thirty (30) days, begun in good faith to correct said failure and thereafter proceeded diligently to complete such correction, then the State may, at its option, place the Contractor in default and the contract shall terminate on the date specified in such notice. Failure to perform within the time specified in the bid document or bid response shall constitute a default and may cause cancellation of the contract. Where the State has determined the Contractor to be in default, the State reserves the right to obtain any or all products or services covered by the contract on the open market and to charge the Contractor with cost in excess of the contract price. Until such assessed charges have been paid, no subsequent bid response from the defaulting Contractor shall be considered.

Contractor may exercise any rights available to it under Louisiana law to terminate for cause upon the failure of the State to comply with the terms and conditions of this contract provided that the Contractor shall give the State written notice specifying the State's failure and a reasonable opportunity for the State to cure the defect.

6.2.9.2 TERMINATION FOR CONVENIENCE

State may terminate the contract at any time without penalty by giving thirty (30) days written notice to the Contractor of such termination or negotiating with the Contractor an effective date. Contractor shall be entitled to payment

for deliverables in progress, to the extent work has been performed satisfactorily.

6.2.9.3 TERMINATION FOR NON-APPROPRIATION OF FUNDS

The continuation of this contract is contingent upon the continuation of an appropriation of funds by the Legislature to fulfill the requirements of the contract. If the Legislature fails to appropriate sufficient monies to provide for the continuation of a contract or if such appropriation is reduced by the veto of the Governor or by any means provided in the appropriations act to prevent the total appropriations for the year from exceeding revenues for that year or for any other lawful purpose and the effect of such reduction is to provide insufficient monies for the continuation of the contract, the contract shall terminate on the last day of the fiscal year for which funds were appropriated.

6.2.10 CONTRACT MODIFICATIONS

Contract modifications may result from technological enhancements, manufacturer discontinuance, or obsolescence. If an item meets or exceeds original specifications and the price is equal to or lower than the original bid price, a contract modification may be requested in writing by the Contractor to the OTM Contracts Administrator. The Office of Telecommunications Management shall review the request and make a written recommendation to the Office of State Purchasing.

6.2.11 CONTRACT CONTROVERSIES

Contract controversies between the State and Contractor which arise by virtue of the contract between them shall be handled in accordance with Louisiana Revised Statute 39:1673. This includes without limitation controversies based upon breach of contract, mistake, misrepresentation, or other cause for contract modifications or rescission.

6.2.12 ON-GOING SERVICE REQUIREMENTS

6.2.12.1 PERFORMANCE GUARANTEE

The selected bidder shall execute and deliver to the Division of Administration within ten (10) calendar days after receipt of an order, an original performance guarantee in the amount equal to the total system cost for each individual system project over $50,000 or any major addition project over $50,000. The performance guarantee shall be in the form of a performance bond or an irrevocable standby letter of credit. The performance bond, if used, shall be from a surety company licensed to do business in Louisiana with all fees current and shall be secured by a surety or insurance company and in accordance with

restrictions set by them. The irrevocable standby letter of credit, if used, shall be from a bank or savings association that meets the minimum capital requirements established by state and federal regulatory authority. The performance guarantee shall be made payable to the Treasurer of the State of Louisiana and shall be subject to forfeiture on the part of the successful bidder for failure to meet the contract terms and conditions. The guarantee shall be valid from ten (10) days after receipt of order through the date of acceptance of the system or major addition.

6.2.12.2 BLANK

6.2.12.3 RECORDATION CERTIFICATE FOR ORDERS OVER $50,000

Contractor shall upon receipt of executed contract, performance guarantee and release order, record said contract and performance guarantee with the Clerk of Court in the parish in which the work is to be performed, obtain a Certificate of Recordation from the Clerk of Court and forward this Certificate immediately to the Office of State Purchasing. This certificate shall be recorded within thirty (30) calendar days after work has begun and shall be received by the Office of State Purchasing before acceptance of the project can be executed.

6.2.13 REMEDIES

6.2.13.1 WARRANTY/SERVICE GUARANTEE REQUIREMENTS

Warranty shall mean that it is the responsibility of the Contractor to repair or replace defective parts and workmanship (including parts and labor) at no additional cost to the State for one year following the acceptance date. Warranty service shall be available 8 hours a day, 5 days a week.

Warranty service for non-critical system problems, as defined in Section 2.1, Definitions, shall have a response time of three (3) calendar days.

Contractor shall provide any manufacturer's warranties associated with products purchased that exceed the one-year mandatory requirement.

The State desires the longest warranty period possible on Contractor workmanship. The bidder should describe any warranties of workmanship that exceed the one-year mandatory requirement on the form provided in Section7.

6.2.13.1.1 EMERGENCY REPAIRS

Warranty service for critical system problems, as defined herein, shall have a response time of one (1) business day after notification of emergency nature trouble.

The response time requirement shall be considered satisfied when a trained technician has arrived on site.

6.2.13.2 LIQUIDATED DAMAGES

It is understood and agreed between the State and the Contractor, that time is of the essence and that for each calendar day of delay beyond the scheduled completion date on the written order after due allowance for such extension of time as is provided herein, and through a maximum of thirty (30) calendar days, the Contractor shall pay to the State as liquidated damages the sum of .5% of the order price. It is understood between the State and the Contractor that such sum shall be treated as liquidated damages and not as a penalty, and that the State may withhold from the Contractor's compensation such sums as liquidated damages.

6.2.13.3 BLANK

6.2.13.4 PUNCH LIST ITEMS

The OTM Project Manager may compose a punch list containing estimated monetary values based on OTM's cost to have the work completed in a satisfactory manner by a third party. Failure by the Contractor to resolve all punch list items to OTM's satisfaction shall result in these monetary values being deducted from partial or final payment to the Contractor.

6.2.13.5 ASBESTOS

Should asbestos be encountered during the performance of the contract, the Contractor shall stop working in the asbestos environment and contact OTM immediately.

6.2.13.6 BLANK

6.2.14 ASSIGNMENT

The Contractor shall not assign any interest in this contract by assignment, transfer, or novation without prior written consent of the State. This provision shall not be construed to prohibit the Contractor from assigning his bank, trust company, or other financial institution any money due or to become due from approved contracts without such prior written consent. Notice of any such assignment or transfer shall be furnished promptly to the State.

6.3 INSURANCE REQUIREMENTS

6.3.1 INDEMNIFICATION AND LIMITATION OF LIABILITY

Neither party shall be liable for any delay or failure in performance beyond its control resulting from acts of God or force majeure. The parties shall use reasonable efforts to eliminate or minimize the effect of such events upon performance of their respective duties under this contract.

Contractor shall be fully liable for the actions of its agents, employees, partners or subcontractors and shall fully indemnify and hold harmless the State from suits, actions, damages and costs of every name and description relating to personal injury and damage to real or personal tangible property caused by Contractor, its agents, employees, partners or subcontractors, without limitation; provided, however, that the Contractor shall not indemnify for that portion of any claim, loss or damage arising hereunder due to the negligent act or failure to act of the State.

Contractor shall indemnify, defend and hold the State harmless, ***without limitation,*** from and against any and all damages, expenses (including reasonable attorneys' fees), claims, judgments, liabilities and costs which may be fully assessed against the State in any action for infringement of a United States Letter Patent with respect to the Products, Materials, or Services furnished by Contractor under its bid response and the contract, or of any copyright trademark, trade secret or intellectual property right, provided that the State shall give the Contractor: (i) prompt written notice of any action, claim or threat of infringement suit, or other suit, (ii) the opportunity to take over, settle or defend such action, claim or suit at Contractor's sole expense, and (iii) assistance in the defense of any such action at the expense of Contractor. Where a dispute or claim arises relative to a real or anticipated infringement, the State may require Contractor, at its sole expense, to submit such information and documentation, including formal patent attorney opinions, as the Commissioner of Administration shall require.

The Contractor shall not be obligated to indemnify that portion of a claim or dispute based upon: i) State's unauthorized modification or alteration of a Product, Material, or Service; ii) State's use of the Product, Material, or Service in combination with other Products, Materials, or Services not furnished by Contractor; iii) State's use in other than the specified operating conditions and environment.

In addition to the foregoing, if the use of any item(s) or part(s) thereof shall be enjoined for any reason or if Contractor believes that it may be enjoined, Contractor shall have the right, at its own expense and sole discretion as the State's exclusive remedy to take action in the following order of precedence: (i)to procure for the State the right to continue using such item(s) or part(s) thereof, as applicable; (ii) to modify the component so that it becomes non-infringing equipment of at least equal quality and performance; or (iii) to replace said item(s) or part(s) thereof, as applicable, with non-infringing components of

at least equal quality and performance, or (iv) if none of the foregoing is commercially reasonable, then provide monetary compensation to the State up to the dollar amount of the contract.

For all other claims against the Contractor where liability is not otherwise set forth in the contract as being "without limitation", and regardless of the basis on which the claim is made, Contractor's liability **for direct damages, shall be the greater of $100,000, the dollar amount of the contract, or two (2) times the charges for Products, Materials, or Services rendered by the Contractor under the contract**. Unless otherwise specifically enumerated herein mutually agreed between the parties, neither party shall be liable to the other for special, indirect or consequential damages, including lost data or records (unless the Contractor is required to back-up the data or records as part of the work plan), even if the party has been advised of the possibility of such damages. Neither party shall be liable for lost profits, lost revenue or lost institutional operating savings.

The State may, in addition to other remedies available to them at law or equity and upon notice to the Contractor, retain such monies from amounts due Contractor, or may proceed against the performance and payment bond, if any, as may be necessary to satisfy any claim for damages, penalties, costs and the like asserted by or against them.

6.3.2 INSURANCE TYPES AND AMOUNTS

Contractor agrees to provide the State of Louisiana with Certificates of adequate insurance indicating coverage as required herein.

Insurance shall be placed with insurers with an A.M. Best's rating of no less than A-:VI. This rating requirement shall be waived for Worker's Compensation coverage only.

Contractor's Insurance: The Contractor shall not commence work under this contract until he has obtained all insurance required herein. Certificates of Insurance, fully executed by officers of the Insurance Company written or countersigned by an authorized Louisiana agency, shall be filed with the State of Louisiana for approval. The Contractor shall not allow any sub-contractor to commence work on his subcontract until all similar insurance required for the subcontractor has been obtained and approved. If so requested, the Contractor shall also submit copies of insurance policies for inspection and approval of the State of Louisiana before work is commenced. Said policies shall not hereafter be canceled, permitted to expire, or be changed without thirty (30) days notice in advance to the State of Louisiana and consented to by the State of Louisiana in writing and the policies shall so provide.

Compensation Insurance: Before any work is commenced, the Contractor shall take out and maintain during the life of the contract, Workers' Compensation Insurance for all of the Contractor's employees employed at the site of the project. In case any work is sublet, the Contractor shall require the subcontractor similarly to provide Workers' Compensation Insurance for all of the latter's employees, unless such employees are covered by the protection afforded by the Contractor. In case any class of employees engaged in work under the contract at the site of the project is not protected under the Workers' Compensation Statute, the Contractor shall provide for any such employees, and shall further provide or cause any and all subcontractors to provide Employer's Liability Insurance for the protection of such employees not protected by the Workers' Compensation Statute.

Commercial General Liability Insurance: The Contractor shall take out and maintain during the life of the contract such Commercial General Liability Insurance which shall protect him, the State, and any subcontractor during the performance of work covered by the contract from claims or damages for personal injury, including accidental death, as well as for claims for property damages, which may arise from operations under the contract, whether such operations be by himself or by a subcontractor, or by anyone directly or indirectly employed by either of them, or in such a manner as to impose liability on the State. Such insurance shall name the State as additional insured for claims arising from or as the result of the operations of the Contractor or his subcontractors. In the absence of specific regulations, the amount of coverage shall be as follows: Commercial General Liability Insurance, including bodily injury, property damage and contractual liability, with combined single limits of $1,000,000.

Insurance Covering Special Hazards: Special hazards as determined by the State shall be covered by rider or riders in the Commercial General Liability Insurance Policy or policies herein elsewhere required to be furnished by the Contractor, or by separate policies of insurance in the amounts as defined in any Special Conditions of the contract included therewith.

Licensed and Non-Licensed Motor Vehicles: The Contractor shall take out and maintain during the life of the contract, Automobile Liability Insurance in an amount not less than combined single limits of $1,000,000 per occurrence for bodily injury/property damage. Such insurance shall also cover the use of any non-licensed motor vehicles engaged in operations within the terms of the contract on the site of the work to be performed thereunder, unless such coverage is included in insurance elsewhere specified.

Subcontractor's Insurance: The Contractor shall require that any and all subcontractors, which are not protected under the Contractor's own insurance

policies, take and maintain insurance of the same nature and in the same amounts as required of the Contractor.

INSURANCE FOR PROJECTS TOTALING $50,000 OR MORE – the Contractor shall purchase and maintain property insurance upon the entire work included in the subordinate contract for an amount equal to the greater of the full-completed value or the amount of the construction subordinate contract including any amendments thereto (with the exception of the following sub-limit for flood/quake). Contractor's policy shall provide "ALL RISK" Builder's Risk Insurance (extended to include the perils of flood, earthquake, collapse, vandalism/malicious mischief, and theft, including theft of materials whether or not attached to any structure). Flood/earthquake sub-limit shall equal an amount no lower than ten percent (10%) of the total subordinate contract cost per occurrence.

The policy shall include the interest of the Owner, Contractor and Subcontractors as their interest may appear. The "All Risk" Builder's Risk Insurance shall also cover architects' and engineers' fees that may be necessary to provide plans and specifications and supervision of work for the repair and/or replacement of property damage caused by a covered peril.

Policies insuring projects involving additions, alterations or repairs to existing buildings or structures shall include an endorsement providing the following:

"In the event of a disagreement regarding a loss covered by this policy which may also be covered by the State of Louisiana, Policy of self-insurance or any Commercial Property Insurance policy purchased by the State of Louisiana, Office of Risk Management (ORM) covering in excess of the State of Louisiana, Policy of self-insurance, this company agrees to follow the following procedure to establish coverage and/or the amount of loss:

> Any party to a loss may make written demand for an appraisal of the matter in disagreement. Within 20 days of receipt of written demand, this company and either ORM or its commercial insurance company shall each select a competent and impartial appraiser and notify the other of the appraiser selected. The two appraisers shall select a competent and impartial umpire. The appraisers shall then identify the policy or policies under which the loss is insured and, if necessary, state separately the value of the property and the amount of the loss that must be borne by each policy. If the two appraisers fail to agree, they shall submit their differences to the umpire. A written decision by any two shall determine the policy or policies and the amount of the loss. Each insurance company or (ORM) agree that the decision of the appraisers and the umpire if involved, shall be

binding and final and that neither party shall resort to litigation. Each of the two parties shall pay its chosen appraiser and bear the cost of the umpire equally".

7.0 BIDDER RESPONSE FORMS
7.1 PRICING PAGES

COMPLEX WIRE AND CABLE CONTRACT UNITS

LINE	ITEM DECSRIPTION	UNIT	REGION 1	REGION 2	REGION 3	REGION 4
	INFRASTRUCTURE / PATHWAY UNITS					
1001	Cable Tag, Innerduct, Material Pre-approved Part # Almatek P/N - PS 2.0	each				
1002	Cable Tag, Innerduct, Labor	each				
1003	Conduit, Electric Metallic Tubing , 3/4" Dia., 10' Long, Material Pre-approved Part # Allied P/N - ¾ EMT	10 ft				
1004	Conduit, Electric Metallic Tubing , 3/4" Dia., 10' Long, Labor	10 ft				
1005	Conduit, Electric Metallic Tubing , 1" Dia., 10' Long, Material Pre-approved Part # Allied P/N - 1 EMT	10 ft				
1006	Conduit, Electric Metallic Tubing , 1" Dia., 10' Long, Labor	10 ft				
1007	Conduit, Electric Metallic Tubing , 1-1/2" Dia., 10' Long, Mat. Pre-approved Part # Allied P/N - 1-1/2 EMT	10 ft				
1008	Conduit, Electric Metallic Tubing , 1-1/2" Dia., 10' Long, Labor	10 ft				
1009	Conduit, Electric Metallic Tubing , 2" Dia., 10' Long, Material Pre-approved Part # Allied P/N - 2 EMT	10 ft				
1010	Conduit, Electric Metallic Tubing , 2" Dia., 10' Long, Labor	10 ft				

1011	Conduit, Electric Metallic Tubing , 4" Dia., 10' Long, Material Pre-approved Part # Allied P/N - 4 EMT	10 ft				
1012	Conduit, Electric Metallic Tubing , 4" Dia., 10' Long, Labor	10 ft				
1013	Conduit 90°-Elbow, EMT, 2" Dia. Normal Radius, Material Pre-approved Part # Allied P/N - 2-90D-24R-EMT-ELL	each				
1014	Conduit 90°-Elbow, EMT, 2" Dia. Normal Radius, Labor	each				
1015	Conduit 90°-Elbow, EMT, 4" Dia. Normal Radius, Material Pre-approved Part # Allied P/N - 4-90D-24R-EMT-ELL	each				
1016	Conduit 90°-Elbow, EMT, 4" Dia. Normal Radius, Labor	each				
1017	Conduit 45°-Elbow, EMT, 2" Dia. Normal Radius, Material Pre-approved Part # Allied P/N - 2-45D-24R-EMT-ELL	each				
1018	Conduit 45°-Elbow, EMT, 2" Dia. Normal Radius, Labor	each				
1019	Conduit 45°-Elbow, EMT, 4" Dia. Normal Radius, Material Pre-approved Part # Allied P/N - 4-45D-24R-EMT-ELL	each				
1020	Conduit 45°-Elbow, EMT, 4" Dia. Normal Radius, Labor	each				
1021	Conduit, Rigid Galv. Steel, 3/4" Dia., 10' Long, Material Pre-approved Part # Allied P/N - ¾ GALV	10 ft				
1022	Conduit, Rigid Galv. Steel, 3/4" Dia., 10' Long, Labor	10 ft				
1023	Conduit, Rigid Galv. Steel, 1" Dia., 10' Long, Material Pre-approved Part # Allied P/N - 1 GALV	10 ft				
1024	Conduit, Rigid Galv. Steel, 1" Dia., 10' Long, Labor	10 ft				

1025	Conduit, Rigid Galv. Steel, 1-1/2" Dia., 10' Long, Material Pre-approved Part # Allied P/N - 1-1/2 GALV	10 ft				
1026	Conduit, Rigid Galv. Steel, 1-1/2" Dia., 10' Long, Labor	10 ft				
1027	Conduit, Rigid Galv. Steel, 2" Dia., 10' Long, Material Pre-approved Part # Allied P/N - 2 GALV	10 ft				
1028	Conduit, Rigid Galv. Steel, 2" Dia., 10' Long, Labor	10 ft				
1029	Conduit, Rigid Galv. Steel , 4" Dia., 10' Long, Material Pre-approved Part # Allied P/N - 4 GALV	10 ft				
1030	Conduit, Rigid Galv. Steel , 4" Dia., 10' Long Labor	10 ft				
1031	Conduit 90°-Elbow, RGS, 2" Dia. Normal Radius, Material Pre-approved Part # Allied P/N - 2-90D-24R-GALV-ELL	each				
1032	Conduit 90°-Elbow, RGS, 2" Dia. Normal Radius, Labor	each				
1033	Conduit 90°-Elbow, RGS, 4" Dia. Normal Radius, Material Pre-approved Part # Allied P/N - 4-90D-24R-GALV-ELL	each				
1034	Conduit 90°-Elbow, RGS, 4" Dia. Normal Radius, Labor	each				
1035	Conduit 45°-Elbow, RGS, 2" Dia. Normal Radius, Material Pre-approved Part # Allied P/N - 2-45D-24R-GALV-ELL	each				
1036	Conduit 45°-Elbow, RGS, 2" Dia. Normal Radius, Labor	each				
1037	Conduit 45°-Elbow, RGS, 4" Dia. Normal Radius, Material Pre-approved Part # Allied P/N - 4-45D-24R-GALV-ELL	each				
1038	Conduit 45°-Elbow, RGS, 4" Dia. Normal Radius, Labor	each				

1039	Flexible Metal Conduit, 3/4" Dia., 5' Long, Material Pre-approved Part # AFC P/N - 5503-xx-00	5 ft				
1040	Flexible Metal Conduit, 3/4" Dia., 5' Long, Labor	5 ft				
1041	Flexible Metal Conduit, 1" Dia., 5' Long, Material Pre-approved Part # AFC P/N - 5504-xx-00	5 ft				
1042	Flexible Metal Conduit, 1" Dia., 5' Long, Labor	5 ft				
1043	Flexible Metal Conduit, 1-1/2" Dia., 5' Long, Material Pre-approved Part # AFC P/N - 5506-xx-00	5 ft				
1044	Flexible Metal Conduit, 1-1/2" Dia., 5' Long, Labor	5 ft				
1045	Flexible Metal Conduit, 2" Dia., 5' Long, Material Pre-approved Part # AFC P/N - 5507-xx-00	5 ft				
1046	Flexible Metal Conduit, 2" Dia., 5' Long, Labor	5 ft				
1047	Flexible Metal Conduit, 4" Dia., 5' Long, Material Pre-approved Part # AFC P/N - 5511-xx-00	5 ft				
1048	Flexible Metal Conduit, 4" Dia., 5' Long, Labor	5 ft				
1049	Flexible Liquidtight Metal Conduit, 3/4" Dia., 5' Long, Material Pre-approved Part # AFC P/N - 5503-xx-00	5 ft				
1050	Flexible Liquidtight Metal Conduit, 3/4" Dia., 5' Long, Labor	5 ft				
1051	Flexible Liquidtight Metal Conduit, 1" Dia., 5' Long, Material Pre-approved Part # AFC P/N - 6203-xx-00	5 ft				
1052	Flexible Liquidtight Metal Conduit, 1" Dia., 5' Long, Labor	5 ft				

1053	Flexible Liquidtight Metal Conduit, 1-1/2" Dia., 5' Long, Material Pre-approved Part # AFC P/N - 6205-xx-00	5 ft				
1054	Flexible Liquidtight Metal Conduit, 1-1/2" Dia., 5' Long, Labor	5 ft				
1055	Flexible Liquidtight Metal Conduit, 2" Dia., 5' Long, Material Pre-approved Part # AFC P/N - 6207-xx-00	5 ft				
1056	Flexible Liquidtight Metal Conduit, 2" Dia., 5' Long, Labor	5 ft				
1057	Flexible Liquidtight Metal Conduit, 4" Dia., 5' Long, Material Pre-approved Part # AFC P/N - 6210-xx-00	5 ft				
1058	Flexible Liquidtight Metal Conduit, 4" Dia., 5' Long, Labor	5 ft				
1059	Flexible Liquidtight Non-Metallic Cond., 3/4" Dia., 5' Long, Mat. Pre-approved Part # AFC P/N - 6003-xx-00	5 ft				
1060	Flexible Liquidtight Non-Metallic Cond., 3/4" Dia., 5' Long, Labor	5 ft				
1061	Flexible Liquidtight Non-Metallic Cond., 1" Dia., 5' Long, Mat. Pre-approved Part # AFC P/N - 6004-xx-00	5 ft				
1062	Flexible Liquidtight Non-Metallic Cond., 1" Dia., 5' Long, Labor	5 ft				
1063	Flexible Liquidtight Non-Metallic Cond., 1-1/2" Dia., 5' Long, Mat. Pre-approved Part # AFC P/N - 6006-xx-00	5 ft				
1064	Flexible Liquidtight Non-Metallic Cond., 1-1/2" Dia., 5' Long, Lab.	5 ft				
1065	Flexible Liquidtight Non-Metallic Cond., 2" Dia., 5' Long, Mat. Pre-approved Part # AFC P/N - 6007-xx-00	5 ft				
1066	Flexible Liquidtight Non-Metallic Cond., 2" Dia., 5' Long, Labor	5 ft				

1067	InnerDuct, PVC 3/4" Dia., Material Pre-approved Part # Carlon P/N - AF4X1A	ft				
1068	InnerDuct, Plenum 3/4" Dia., Material Pre-approved Part # Carlon P/N - CF4X1C	ft				
1069	Inner Duct, Riser 3/4" Dia., Material Pre-approved Part # Carlon P/N - DF4X1C	ft				
1070	Inner Duct, All Types 3/4" Dia., Labor Single	ft				
1071	Inner Duct, All Types 3/4" Dia., Labor Multiple	ft				
1072	Inner Duct, PVC 1" Dia., Material Pre-approved Part # Carlon P/N - AF4X1A	ft				
1073	Inner Duct, Plenum 1" Dia., Material Pre-approved Part # Carlon P/N - CF4X1C	ft				
1074	Inner Duct, Riser 1" Dia., Material Pre-approved Part # Carlon P/N - DF4X1C	ft				
1075	Inner Duct, All Types 1" Dia., Labor Single	ft				
1076	Inner Duct, All Types 1" Dia., Labor Multiple	ft				
1077	Inner Duct, PVC 1-1/4" Dia., Material Pre-approved Part # Carlon P/N - AW4X1A	ft				
1078	Inner Duct, Plenum 1-1/4" Dia., Material Pre-approved Part # Carlon P/N - CG4X1C	ft				
1079	Inner Duct, Riser 1-1/4" Dia., Material Pre-approved Part # Carlon P/N - DG4X1C	ft				

1080	Inner Duct, All Types 1-1/4" Dia., Labor Single	ft				
1081	Inner Duct, All Types 1-1/4" Dia., Labor Multiple	ft				
1082	Inner Duct, 1" Coupling, Material	each				
1083	Inner Duct, 1-1/4" Coupling, Material	each				
1084	Innerduct, Coupling All Sizes, Labor	each				
1085	Pull Line, Rope, Material Pre-approved Part # Crowe P/N - 05103	ft				
1086	Pull Line, Rope, Labor	ft				
1087	Pull Line, String, Material Pre-approved Part # Greenlee P/N - 430	ft				
1088	Pull Line, String, Labor	ft				
1089	Enclosure, Metallic, NEMA 1, 6"X6"X4", Material Pre-approved Part # B-Line P/N - 664SC	each				
1090	Enclosure, Metallic, NEMA 1, 6"X6"X4", Labor	each				
1091	Enclosure, Metallic, NEMA 1, 8"X8"X6", Material Pre-approved Part # B-Line P/N - 886SC	each				
1092	Enclosure, Metallic, NEMA 1, 8"X8"X6", Labor	each				
1093	Enclosure, Metallic, NEMA 1,12"X12"X6", Material Pre-approved Part # B-Line P/N - 12126SC	each				
1094	Enclosure, Metallic, NEMA 1,12"X12"X6", Labor	each				
1095	Enclosure, Metallic, NEMA 1,12"X12"X8", Material	each				

	Pre-approved Part # B-Line P/N - 12128SC-NK					
1096	Enclosure, Metallic, NEMA 1,12"X12"X8", Labor	each				
1097	Enclosure, Metallic, NEMA 1, 18"X18"X8", Material Pre-approved Part # B-Line P/N - 18188SC-NK	each				
1098	Enclosure, Metallic, NEMA 1, 18"X18"X8", Labor	each				
1099	Enclosure, Metallic, NEMA 1, 24"X24"X10", Material Pre-approved Part # B-Line P/N - 242410SC-NK	each				
1100	Enclosure, Metallic, NEMA 1, 24"X24"X10", Labor	each				
1101	Enclosure, Metallic, NEMA 1, 36"X36"X12", Material Pre-approved Part # B-Line P/N - 363612SC-NK	each				
1102	Enclosure, Metallic, NEMA 1, 36"X36"X12", Labor	each				
1103	Enclosure, Metallic NEMA 12, 6"X6"X4", Material. Pre-approved Part # B-Line P/N - 664-12SC	each				
1104	Enclosure, Metallic NEMA 12, 6"X6"X4", Labor	each				
1105	Enclosure, Metallic NEMA 12, 8"X8"X6", Material. Pre-approved Part # B-Line P/N - 1086-12SC	each				
1106	Enclosure, Metallic NEMA 12, 8"X8"X6", Labor	each				
1107	Enclosure, Metallic NEMA 12, 12"X12"X6", Material Pre-approved Part # B-Line P/N - 12126-12SC	each				
1108	Enclosure, Metallic NEMA 12, 12"X12"X6", Labor	each				
1109	Enclosure, Metallic NEMA 12, 12"X12"X8", Material Pre-approved Part # B-Line P/N - 14128-12CHC	each				

1110	Enclosure, Metallic NEMA 12, 12"X12"X8", Labor	each				
1111	Enclosure, Metallic NEMA 12, 18"X18"X8", Material Pre-approved Part # B-Line P/N - 20168-12	each				
1112	Enclosure, Metallic NEMA 12, 18"X18"X8", Labor	each				
1113	Enclosure, Metallic NEMA 12, 24"X24"X10", Material Pre-approved Part # B-Line P/N - 242410-12	each				
1114	Enclosure, Metallic NEMA 12, 24"X24"X10", Labor	each				
1115	Enclosure, Metallic NEMA 12, 36"X36"X12", Material Pre-approved Part # B-Line P/N - 363612-12	each				
1116	Enclosure, Metallic NEMA 12, 36"X36"X12", Labor	each				
1117	Enclosure, Metallic NEMA 12, 8"X8"X24" Trough, Material Pre-approved Part # B-Line P/N - 8824-12WT	each				
1118	Enclosure, Metallic NEMA 12, 8"X8"X24" Trough, Labor	each				
1119	Enclosure, Metallic NEMA 12, 8"X8"X36" Trough, Material Pre-approved Part # B-Line P/N - 8836-12WT	each				
1120	Enclosure, Metallic NEMA 12, 8"X8"X36" Trough, Labor	each				
1121	Core, Sleeve, & Fire Stop, Masonry, 1" I.D., Per 1" Depth, Mat. Pre-approved Part # Blackburn Nipple P/N-N3xBB, Steel City Bushing P/N-BU-503, Steel City Locknut P/N-LN-103, STI Caulk P/N-SSS100 & STI Mineral Wool P/N-SSAMW	inch				
1122	Core, Sleeve & Fire Stop, Masonry, 1" I.D., Per 1" Depth, Labor	inch				
1123	Core, Sleeve, & Fire Stop, Masonry, 2" I.D., Per 1" Depth, Mat.	inch				

	Pre-approved Part # Blackburn Nipple P/N-N6xBB, Steel City Bushing P/N-BU-506, Steel City Locknut P/N-LN-106, STI Caulk P/N-SSS100 & STI Mineral Wool P/N-SSAMW					
1124	Core, Sleeve & Fire Stop, Masonry, 2" I.D., Per 1" Depth, Labor.	inch				
1125	Core, Sleeve, & Fire Stop, Masonry, 4" I.D., Per 1" Depth, Mat. Pre-approved Part # Blackburn Nipple P/N-N9xBB, Steel City Bushing P/N-BU-510, Steel City Locknut P/N-LN-110, STI Caulk P/N-SSS100 & STI Mineral Wool P/N-SSAMW	inch				
1126	Core, Sleeve & Fire Stop, Masonry, 4" I.D., Per 1" Depth, Labor	inch				
1127	Core, Sleeve, & Fire Stop, Drywall, 1" I.D., Per 1" Depth, Mat. Pre-approved Part # Blackburn Nipple P/N-N3xBB, Steel City Bushing P/N-BU-503, Steel City Locknut P/N-LN-103, STI Caulk P/N-SSS100	inch				
1128	Core, Sleeve & Fire Stop, Drywall, 1" I.D., Per 1" Depth, Labor	inch				
1129	Core, Sleeve, & Fire Stop, Drywall, 2" I.D., Per 1" Depth, Mat. Pre-approved Part # Blackburn Nipple P/N-N6xBB, Steel City Bushing P/N-BU-506, Steel City Locknut P/N-LN-106, & STI Caulk P/N-SSS100	inch				
1130	Core, Sleeve & Fire Stop, Drywall, 2" I.D., Per 1" Depth, Labor	inch				
1131	Core, Sleeve, & Fire Stop, Drywall, 4" I.D., Per 1" Depth, Mat. Pre-approved Part # Blackburn Nipple P/N-N9xBB, Steel City Bushing P/N-BU-510, Steel City Locknut P/N-LN-110, STI Caulk P/N-SSS100	inch				
1132	Core, Sleeve & Fire Stop, Drywall, 4" I.D., Per 1" Depth, Labor	inch				
1133	Core, Sleeve, & Fire Stop, Concrete, 1" I.D., Per 1" Depth, Mat. Pre-approved Part # Blackburn Nipple P/N-N3xBB, Steel City	inch				

	Bushing P/N-BU-503, Steel City Locknut P/N-LN-103, STI Caulk P/N-SSS100 & STI Mineral Wool P/N-SSAMW					
1134	Core, Sleeve & Fire Stop, Concrete, 1" I.D., Per 1" Depth, Labor	inch				
1135	Core, Sleeve, & Fire Stop, Concrete, 2" I.D., Per 1" Depth, Mat. Pre-approved Part # Blackburn Nipple P/N-N6xBB, Steel City Bushing P/N-BU-506, Steel City Locknut P/N-LN-103, STI Caulk P/N-SSS100 & STI Mineral Wool P/N-SSAMW	inch				
1136	Core, Sleeve & Fire Stop, Concrete, 2" I.D., Per 1" Depth, Labor	inch				
1137	Core, Sleeve, & Fire Stop, Concrete, 4" I.D., Per 1" Depth, Mat. Pre-approved Part # Blackburn Nipple P/N-N9xBB, Steel City Bushing P/N-BU-510, Steel City Locknut P/N-LN-110, STI Caulk P/N-SSS100 & STI Mineral Wool P/N-SSAMW	inch				
1138	Core, Sleeve & Fire Stop, Concrete, 4" I.D., Per 1" Depth, Labor	inch				
1139	Core, Sleeve, & Non-Fire, Masonry, 1" I.D., Per 1" Depth, Mat. Pre-approved Part # Blackburn Nipple P/N-N3xBB, Steel City Bushing P/N-BU-503, Steel City Locknut P/N-LN-103, & Panduit P/N-DS1	inch				
1140	Core, Sleeve & Non-Fire, Masonry, 1" I.D., Per 1" Depth, Labor	inch				
1141	Core, Sleeve, & Non-Fire, Masonry, 2" I.D., Per 1" Depth, Mat. Pre-approved Part # Blackburn Nipple P/N-N6xBB, Steel City Bushing P/N-BU-506, Steel City Locknut P/N-LN-106, & Panduit P/N-DS1	inch				
1142	Core, Sleeve & Non-Fire, Masonry, 2" I.D., Per 1" Depth, Labor	inch				
1143	Core, Sleeve, & Non-Fire, Masonry, 4" I.D., Per 1" Depth, Mat. Pre-approved Part # Blackburn Nipple P/N-N9xBB, Steel City Bushing P/N-BU-510, Steel City Locknut P/N-LN-110, &	inch				

	Panduit P/N-DS1					
1144	Core, Sleeve & Non-Fire, Masonry, 4" I.D., Per 1" Depth, Labor	inch				
1145	Core, Sleeve, & Non-Fire, Drywall, 1" I.D., Per 1" Depth, Mat. Pre-approved Part # Blackburn Nipple P/N-N3xBB, Steel City Bushing P/N-BU-503, Steel City Locknut P/N-LN-103, & Panduit P/N-DS1	inch				
1146	Core, Sleeve & Non-Fire, Drywall, 1" I.D., Per 1" Depth, Labor	inch				
1147	Core, Sleeve, & Non-Fire, Drywall, 2" I.D., Per 1" Depth, Mat. Pre-approved Part # Blackburn Nipple P/N-N6xBB, Steel City Bushing P/N-BU-506, Steel City Locknut P/N-LN-106, & Panduit P/N-DS1	inch				
1148	Core, Sleeve & Non-Fire, Drywall, 2" I.D., Per 1" Depth, Labor	inch				
1149	Core, Sleeve, & Non-Fire, Drywall, 4" I.D., Per 1" Depth, Mat. Pre-approved Part # Blackburn Nipple P/N-N9xBB, Steel City Bushing P/N-BU-510, Steel City Locknut P/N-LN-110, & Panduit P/N-DS1	inch				
1150	Core, Sleeve & Non-Fire, Drywall, 4" I.D., Per 1" Depth, Labor	inch				
1151	Core, Sleeve, & Non-Fire, Concrete, 1" I.D., Per 1" Depth, Mat. Pre-approved Part # Blackburn Nipple P/N-N3xBB, Steel City Bushing P/N-BU-503, Steel City Locknut P/N-LN-103, & Panduit P/N-DS1	inch				
1152	Core, Sleeve & Non-Fire, Concrete, 1" I.D., Per 1" Depth, Labor	inch				
1153	Core, Sleeve, & Non-Fire, Concrete, 2" I.D., Per 1" Depth, Mat. Pre-approved Part # Blackburn Nipple P/N-N6xBB, Steel City Bushing P/N-BU-506, Steel City Locknut P/N-LN-106, & Panduit P/N-DS1	inch				

1154	Core, Sleeve & Non-Fire, Concrete, 2" I.D., Per 1" Depth, Labor	inch				
1155	Core, Sleeve, & Non-Fire, Concrete, 4" I.D., Per 1" Depth, Mat. Pre-approved Part # Blackburn Nipple P/N-N9xBB, Steel City Bushing P/N-BU-510, Steel City Locknut P/N-LN-110, & Panduit P/N-DS1	inch				
1156	Core, Sleeve & Non-Fire, Concrete, 4" I.D., Per 1" Depth, Labor	inch				
1157	Drilled Hole, 5/8", Non-Sleeved & Fire Stop, Masonry, Materials	inch				
1158	Drilled Hole, 5/8", Non-Sleeved & Fire Stop, Masonry, Labor	inch				
1159	Drilled Hole, 5/8", Non-Sleeved & Fire Stop, Drywall, Materials	inch				
1160	Drilled Hole, 5/8", Non-Sleeved & Fire Stop, Drywall, Labor	inch				
1161	Drilled Hole, 5/8", Non-Sleeved & Fire Stop, Concrete, Materials	inch				
1162	Drilled Hole, 5/8", Non-Sleeved & Fire Stop, Concrete, Labor	inch				
1163	Drilled Hole, 5/8", Non-Sleeved & Non-Fire, Masonry, Materials	inch				
1164	Drilled Hole, 5/8", Non-Sleeved & Non-Fire, Masonry, Labor	inch				
1165	Drilled Hole, 5/8", Non-Sleeved & Non-Fire, Drywall, Materials	inch				
1166	Drilled Hole, 5/8", Non-Sleeved & Non-Fire, Drywall, Labor	inch				
1167	Drilled Hole, 5/8", Non-Sleeved & Non-Fire, Concrete, Materials	inch				
1168	Drilled Hole, 5/8", Non-Sleeved & Non-Fire, Concrete, Labor	inch				
1169	Drop Pole , 2-1/4" Square, 10'-2" Height, Material Pre-approved Part # Hubble P/N - HSP10ABx & HPWATB	each				

1170	Drop Pole , 2-1/4" Square, 10'-2" Height, Labor	each				
1171	Drop Pole , 2-1/4" Square, 12'-2" Height, Material Pre-approved Part # Hubble P/N - HSP12ABx & HPWATB	each				
1172	Drop Pole , 2-1/4" Square, 12'-2" Height, Labor	each				
1173	Drop Pole , 2-1/4" Square, 15'-2" Height, Material Pre-approved Part # Hubble P/N - HSP15ABx & HPWATB	each				
1174	Drop Pole , 2-1/4" Square, 15'-2" Height, Labor	each				
1175	Floor Cable Duct, 1/2" ID Wide, 5' Long, Material Pre-approved Part # Hubbell P/N - HPWFT2BKxx	5 ft				
1176	Floor Cable Duct, 1/2" ID Wide, 5' Long, Labor	5 ft				
1177	Floor Cable Duct, 1" ID Wide, 5' Long, Material Pre-approved Part # Hubbell P/N - HPWFT4BKxx	5 ft				
1178	Floor Cable Duct, 1" ID Wide, 5' Long, Labor	5 ft				
1179	Surface Raceway Wall, 3/4" Wide, 5 Ft. Length, Material Pre-approved Part # Hubble P/N - MT3BC7	5 ft				
1180	Surface Raceway Wall, 3/4" Wide, 5 Ft. Length, Labor	5 ft				
1181	Surface Raceway Wall, 1.5" Wide, 5 Ft. Length, Material Pre-approved Part # Hubble P/N - MT7BC7	5 ft				
1182	Surface Raceway Wall, 1.5" Wide, 5 Ft. Length, Labor	5 ft				
1183	Surface Raceway Wall, 2" Wide, 5 Ft. Length, Material Pre-approved Part # Hubble P/N - MT8BC7	5 ft				

1184	Surface Raceway Wall, 2" Wide, 5 Ft. Length, Labor	5 ft				
1185	Surface Raceway Wall, 4" Wide, 5 Ft. Length, Material Pre-approved Part # Hubble P/N - MT5BC5	5 ft				
1186	Surface Raceway Wall, 4" Wide, 5 Ft. Length, Labor	5 ft				
1187	Wire Duct, 2" x 2", Material Pre-approved Part # Panduit P/N - E2x2LG6 & C2LG6	ft				
1188	Wire Duct, 2" x 2", Labor	ft				
1189	Wire Duct, 4" x 4", Material Pre-approved Part # Panduit P/N - E4x4LG6 & C4LG6	ft				
1190	Wire Duct, 4" x 4", Labor	ft				
1191	Outlet Bracket, Faceplate Bracket, Single-Gang, Material Pre-approved Part # Erico P/N - MP1P	each				
1192	Outlet Bracket, Faceplate Bracket, Single-Gang, Labor	each				
1193	Outlet Box, Recessed in Wall, Single-Gang, Material Pre-approved Part # Steel City P/N - CDOW-TG	each				
1194	Outlet Box, Recessed in Wall, Single-Gang, Labor	each				
1195	Outlet Box, Recessed in Firewall, Single-Gang, Material Pre-approved Part # Steel City P/N - CDOW-TG & STI P/N - SSP4S	each				
1196	Outlet Box, Recessed in Firewall, Single-Gang, Labor	each				
1197	Outlet Box, Recessed in Wall, Double-Gang, Material Pre-approved Part # Steel City P/N - 52171-xxx	each				

1198	Outlet Box, Recessed in Wall, Double-Gang, Labor	each				
1199	Outlet Box, Recessed in Firewall, Double-Gang, Material Pre-approved Part # Steel City P/N - 52171-xxx & STI P/N - SSP4S	each				
1200	Outlet Box, Recessed in Firewall, Double-Gang, Labor	each				
1201	Outlet Box, Surface Mount, Single-Gang, Material Pre-approved Part # Hubble P/N - MT34SBA / MT678SB	each				
1202	Outlet Box, Surface Mount, Single-Gang, Labor	each				
1203	Outlet Box, Surface Mount, Double-Gang, Material Pre-approved Part # Hubble P/N - MT678CTGB	each				
1204	Outlet Box, Surface Mount, Double-Gang, Labor	each				
1205	Outlet Box, Tombstone on Floors Single-Gang, Material Pre-approved Part # Wiremold P/N - 500LR & Hubbell P/N - BR106x	each				
1206	Outlet Box, Tombstone on Floor, Single-Gang, Labor	each				
	INDOOR PLANT UNITS					
2001	Voice Cable, UL-CMR PVC, 6 Pr. 24 GA., Material Pre-approved Part # General Cable P/N - 2133021	ft				
2002	Voice Cable, UL-CMR PVC, 6 Pr. 24 GA., Labor Single	ft				
2003	Voice Cable, UL-CMR PVC, 6 Pr. 24 GA., Labor Multiple	ft				
2004	Voice Cable, UL-CMR PVC, 12 Pr. 24 GA., Material Pre-approved Part # General Cable P/N - 2133027	ft				
2005	Voice Cable, UL-CMR PVC, 12 Pr. 24 GA., Labor Single	ft				

2006	Voice Cable, UL-CMR PVC, 12 Pr. 24 GA., Labor Multiple	ft				
2007	Voice Cable, UL-CMR PVC, 25 Pr. 24 GA., Material Pre-approved Part # General Cable P/N - 2133033	ft				
2008	Voice Cable, UL-CMR PVC, 25 Pr. 24 GA., Labor Single	ft				
2009	Voice Cable, UL-CMR PVC, 25 Pr. 24 GA., Labor Multiple	ft				
2010	Voice Cable, UL-CMR PVC, 50 Pr. 24 GA., Material Pre-approved Part # General Cable P/N - 2133161	ft				
2011	Voice Cable, UL-CMR PVC, 50 Pr. 24 GA., Labor Single	ft				
2012	Voice Cable, UL-CMR PVC, 50 Pr. 24 GA., Labor Multiple	ft				
2013	Voice Cable, UL-CMR PVC, 100 Pr. 24 GA., Material Pre-approved Part # General Cable P/N - 2133144	ft				
2014	Voice Cable, UL-CMR PVC, 100 Pr. 24 GA., Labor Single	ft				
2015	Voice Cable, UL-CMR PVC, 100 Pr. 24 GA., Labor Multiple	ft				
2016	Voice Cable, UL-CMR PVC, 200 Pr. 24 GA., Material Pre-approved Part # General Cable P/N - 2133323	ft				
2017	Voice Cable, UL-CMR PVC, 200 Pr. 24 GA., Labor Single	ft				
2018	Voice Cable, UL-CMR PVC, 200 Pr. 24 GA., Labor Multiple	ft				
2019	Voice Cable, UL-CMR PVC, 300 Pr. 24 GA., Material Pre-approved Part # General Cable P/N - 2133373	ft				
2020	Voice Cable, UL-CMR PVC, 300 Pr. 24 GA., Labor Single	ft				
2021	Voice Cable, UL-CMR PVC, 300 Pr. 24 GA., Labor Multiple	ft				

2022	Voice Cable, Riser, ARMM 25 Pr. 24 GA., Material Pre-approved Part # General Cable P/N - 2019000	ft				
2023	Voice Cable Riser, ARMM 25 Pr. 24 GA., Labor Single	ft				
2024	Voice Cable, Riser, ARMM 25 Pr. 24 GA., Labor Multiple	ft				
2025	Voice Cable, Riser, ARMM 50 Pr. 24 GA., Material Pre-approved Part # General Cable P/N - 2019001	ft				
2026	Voice Cable, Riser, ARMM 50 Pr. 24 GA., Labor Single	ft				
2027	Voice Cable, Riser, ARMM 50 Pr. 24 GA., Labor Multiple	ft				
2028	Voice Cable, Riser, ARMM 100 Pr. 24 GA., Material Pre-approved Part # General Cable P/N - 7507601	ft				
2029	Voice Cable, Riser, ARMM 100 Pr. 24 GA., Labor Single	ft				
2030	Voice Cable, Riser, ARMM 100 Pr. 24 GA., Labor Multiple	ft				
2031	Voice Cable, Riser, ARMM 200 Pr. 24 GA., Material Pre-approved Part # General Cable P/N - 7507619	ft				
2032	Voice Cable, Riser, ARMM 200 Pr. 24 GA., Labor Single	ft				
2033	Voice Cable, Riser, ARMM 200 Pr. 24 GA., Labor Multiple	ft				
2034	Voice Cable, Riser, ARMM 300 Pr. 24 GA., Material Pre-approved Part # General Cable P/N - 7507627	ft				
2035	Voice Cable, Riser, ARMM 300 Pr. 24 GA., Labor Single	ft				
2036	Voice Cable, Riser, ARMM 300 Pr. 24 GA., Labor Multiple	ft				
2037	Voice Cable, Riser, ARMM 400 Pr. 24 GA., Material	ft				

	Pre-approved Part # General Cable P/N - 7507635					
2038	Voice Cable, Riser, ARMM 400 Pr. 24 GA., Labor Single	ft				
2039	Voice Cable, Riser, ARMM 400 Pr. 24 GA., Labor Multiple	ft				
2040	Voice Cable, Riser, ARMM 600 Pr. 24 GA., Material Pre-approved Part # General Cable P/N - 7507643	ft				
2041	Voice Cable, Riser, ARMM 600 Pr. 24 GA., Labor Single	ft				
2042	Voice Cable, Riser, ARMM 600 Pr. 24 GA., Labor Multiple	ft				
2043	Voice Cable, UL-CMP Plenum, 6 Pr. 24 GA., Material Pre-approved Part # General Cable P/N - 2131246	ft				
2044	Voice Cable, UL-CMP Plenum, 6 Pr. 24 GA., Labor Single	ft				
2045	Voice Cable, UL-CMP Plenum, 6 Pr. 24 GA., Labor Multiple	ft				
2046	Voice Cable, UL-CMP Plenum, 12 Pr. 24 GA., Material Pre-approved Part # General Cable P/N - 2131440	ft				
2047	Voice Cable, UL-CMP Plenum, 12 Pr. 24 GA., Labor Single	ft				
2048	Voice Cable, UL-CMP Plenum, 12 Pr. 24 GA., Labor Multiple	ft				
2049	Voice Cable, UL-CMP Plenum, 25 Pr. 24 GA., Material Pre-approved Part # General Cable P/N - 2131256	ft				
2050	Voice Cable, UL-CMP Plenum, 25 Pr. 24 GA., Labor Single	ft				
2051	Voice Cable, UL-CMP Plenum, 25 Pr. 24 GA., Labor Multiple	ft				
2052	Voice Cable, UL-CMP Plenum, 50 Pr. 24 GA., Material Pre-approved Part # General Cable P/N - 2131376	ft				

2053	Voice Cable, UL-CMP Plenum, 50 Pr. 24 GA., Labor Single	ft				
2054	Voice Cable, UL-CMP Plenum, 50 Pr. 24 GA., Labor Multiple	ft				
2055	Voice Cable, UL-CMP Plenum, 100 Pr. 24 GA., Material Pre-approved Part # General Cable P/N - 2131377	ft				
2056	Voice Cable, UL-CMP Plenum, 100 Pr. 24 GA., Labor Single	ft				
2057	Voice Cable, UL-CMP Plenum, 100 Pr. 24 GA., Labor Multiple	ft				
2058	Voice Cable, UL-CMP Plenum, 200 Pr. 24 GA., Material Pre-approved Part # General Cable P/N - 2131442	ft				
2059	Voice Cable, UL-CMP Plenum, 200 Pr. 24 GA., Labor Single	ft				
2060	Voice Cable, UL-CMP Plenum 200 Pr. 24 GA., Labor Multiple	ft				
2061	Voice Cable, UL-CMP Plenum, 300 Pr. 24 GA., Material Pre-approved Part # General Cable P/N - 2131474	ft				
2062	Voice Cable, UL-CMP Plenum, 300 Pr. 24 GA., Labor Single	ft				
2063	Voice Cable, UL-CMP Plenum, 300 Pr. 24 GA., Labor Multiple	ft				
2064	Splice Case Indoor 100 Pr., Material Pre-approved Part # 3M P/N - KB3-175-1	each				
2065	Splice Case Indoor 100 Pr., Labor	each				
2066	Splice Case Indoor 200 Pr., Material Pre-approved Part # 3M P/N - KB3-175-1	each				
2067	Splice Case Indoor 200 Pr., Labor	each				
2068	Splice Case Indoor 300 Pr., Material	each				

	Pre-approved Part # 3M P/N - KB4-175-1					
2069	Splice Case Indoor 300 Pr., Labor	each				
2070	Splice Case Indoor 400 Pr., Material Pre-approved Part # 3M P/N - KB4-175-1	each				
2071	Splice Case Indoor 400 Pr., Labor	each				
2072	Splice Case Indoor 600 Pr., Material Pre-approved Part # 3M P/N - KB5-100-6	each				
2073	Splice Case Indoor 600 Pr., Labor	each				
2074	Splice Case Indoor 900 Pr., Material Pre-approved Part # 3M P/N - KB6-100-9	each				
2075	Splice Case Indoor 900 Pr., Labor	each				
2076	Splice Case Indoor 1200 Pr., Material Pre-approved Part # 3M P/N - KB7-100-15	each				
2077	Splice Case Indoor 1200 Pr., Labor	each				
2078	Splice 1 Pair, Material Pre-approved Part # 3M P/N - UR2 (single piece)	each				
2079	Splice 1 Pair, Labor	each				
2080	Splice Modular 25 Pair, Material Pre-approved Part # 3M P/N - 3M710-SC1-25	each				
2081	Splice Modular 25 Pair, Labor	each				
2082	Clear Cap 1 Pair, Material Pre-approved Part # 3M P/N - UCC (single piece)	each				

2083	Clear Cap 1 Pair, Labor	each				
2084	Telephone Backboard, 3/4" X4' X 4' , Material Pre-approved Part # 3/4" THK A/C Grade & Benjamin Moore P/N - Retardant Paint	each				
2085	Telephone Backboard, 3/4" X4' X 4' , Labor	each				
2086	Telephone Backboard, 3/4" X4' X 8' , Material Pre-approved Part # 3/4" THK A/C Grade & Benjamin Moore Retardant Paint	each				
2087	Telephone Backboard, 3/4" X4' X 8' , Labor	each				
2088	Metal Backboard, 183A1 Blue 66, Material Pre-approved Part # Varitronic's P/N - M 183 A1	each				
2089	Metal Backboard, 183A2 Green 66, Material Pre-approved Part # Varitronic's P/N - M 183 A2	each				
2090	Metal Backboard, 183A4 Purple 66, Material Pre-approved Part # Varitronic's P/N - M 183 A4	each				
2091	Metal Backboard, 183A5 Yellow 66, Material Pre-approved Part # Varitronic's P/N - M 183 A5	each				
2092	Metal Backboard, 183A7 White 66, Material Pre-approved Part # Varitronic's P/N - M 183 A7	each				
2093	Metal Backboard, 183A8 Gray 66, Material Pre-approved Part # Varitronic's P/N - M 183 A8	each				
2094	Metal Backboard, 183A3 Red 66, Material Pre-approved Part # Varitronic's P/N - M 183 A3	each				

2095	Metal Backboard, 183B1 Blue 66, Material Pre-approved Part # Varitronic's P/N - M 183 B1	each				
2096	Metal Backboard, 183B2 Green 66, Material Pre-approved Part # Varitronic's P/N - M 183 B2	each				
2097	Metal Backboard, 183B3 Red 66, Material Pre-approved Part # Varitronic's P/N - M 183 B3	each				
2098	Metal Backboard, 183B4 Purple 66, Material Pre-approved Part # Varitronic's P/N - M 183 B4	each				
2099	Metal Backboard, 183B5 Yellow 66, Material Pre-approved Part # Varitronic's P/N - M 183 B5	each				
2100	Metal Backboard, 183B8 Gray 66, Material Pre-approved Part # Varitronic's P/N - M 183 B8	each				
2101	Metal Backboard, 183B7 White 66, Material Pre-approved Part # Varitronic's P/N - M 183 B7	each				
2102	Metal Backboard, 187A1 White Spools, Material Pre-approved Part # Varitronic's P/N - M 187 A1	each				
2103	Metal Backboard, 187B1 White Spools, Material Pre-approved Part # Vartronic's P/N - M 187 B1	each				
2104	Metal Backboard, 188 Style, Manager, with Legs, Material Pre-approved Part # Avaya P/N - 188B2	each				
2105	Metal Backboard, 188 Style, 300pr., Material Pre-approved Part # Avaya P/N - 188D3	each				
2106	Metal Backboard, 188 Style, 900pr., Material Pre-approved Part # Avaya P/N - 188C3	each				

2107	Metal Backboard, 110 Jumper Trough Plastic, Material Pre-approved Part # Hubbell P/N - 110TRA	each				
2108	Metal Backboard, Half or Full, Labor	each				
2109	Ground Wire, AWG #6 Green, Per Foot, Material Pre-approved Part # Southwire P/N - THHN-6-STR-GRN	ft				
2110	Ground Wire, AWG #6 Green, Per Foot, Labor	ft				
2111	Ground Bar Kit 2", Material Pre-approved Part # B-Line P/N - SB-477	each				
2112	Ground Bar Kit 4", Material Pre-approved Part # B-Line P/N - SB-476	each				
2113	Ground Bar Kit, Labor	each				
2114	Ground Rod, 1/2" Dia. 8' Long, Material Pre-approved Part # Erico P/N - 611285	each				
2115	Ground Rod, 1/2" Dia. 8' Long, Labor	each				
2116	Interconnect Block, 66MX Block, (1) 50 Pin Telco, Material Pre-approved Part # Siemon P/N - S66M1-50R	each				
2117	Interconnect Block, 66MX Block, (2) 50 Pin Telco, Material Pre-approved Part # Siemon P/N - S66M2-5W	each				
2118	Interconnect Block, 66MX Block, Labor	each				
2119	Interconnect Block, 110 Type, (1) 50 Pin Telco, Material Pre-approved Part # Siemon P/N - S700A110-B1-25	each				
2120	Interconnect Block, 110 Type, (2) 50 Pin Telco, Material	each				

	Pre-approved Part # Siemon P/N - S700A110-B1-50					
2121	Interconnect Block, 110 Type, Labor	each				
2122	Cross Connect Block, 66M1-50, Material Pre-approved Part # Siemon P/N - S66M1-50	each				
2123	Cross Connect Block, 66M1-50, Labor	each				
2124	Cross Connect Block, 89B Bracket, Material Pre-approved Part # Siemon P/N - S89B	each				
2125	Cross Connect Block, 89B Bracket, Labor	each				
2126	Cross Connect Block, Hinged Cover, Material Pre-approved Part # Siemon P/N - MC4LH-x	each				
2127	Cross Connect Block, Hinged Cover, Labor	each				
2128	Cross Connect Block, Labels, Material Pre-approved Part # Siemon P/N - MC4-LBL-25	each				
2129	Cross Connect Block, Labels, Labor	each				
2130	Cross Connect Block, 110 Type, 100-Pair, Material Pre-approved Part # Hubbell P/N - 110BLK100BWL	each				
2131	Cross Connect Block, 110 Type, 100-pair, Labor	each				
2132	Cross Connect Block, 110 Type, 100 Pr. w/C4's, Material Pre-approved Part # Hubbell P/N - 110BLK100FTK4	each				
2133	Cross Connect Block, 110 Type, 100 Pr. w/C4's, Labor	each				
2134	Cross Connect Block, 110 Type, 100 Pr. w/C5's, Material Pre-approved Part # Hubbell P/N - 110BLK100FTK5	each				

2135	Cross Connect Block, 110 Type, 100 Pr. w/C5's, Labor	each				
2136	Cross Connect Block, 110 Type, 300-Pair, Material Pre-approved Part # Hubbell P/N - 110BLK300BWL	each				
2137	Cross Connect Block, 110 Type, 300-Pair, Labor	each				
2138	Cross Connect Block, 110 Type, 300 Pr. w/C4's, Material Pre-approved Part # Hubbell P/N - 110BLK300FTK4	each				
2139	Cross Connect Block, 110 Type, 300 Pr. w/C4's, Labor	each				
2140	Cross Connect Block, 110 Type, 300 Pr. w/C5's, Material Pre-approved Part # Hubbell P/N - 110BLK300FTK5	each				
2141	Cross Connect Block, 110 Type, 300 Pr. w/C5's, Labor	each				
2142	Cross Connect Block, 110 Type Rack Mount, Material 2 X 100 Pair (200-pair) with C4's, labels, & troughs Pre-approved Part # Hubbell P/N - 110RM24	each				
2143	Cross Connect Block, 110 Type Rack Mount, Labor	each				
2144	Cross Connect Module, 110 Type C4, Material Pre-approved Part # Hubbell P/N - 110CB4PR10 (single piece)	each				
2145	Cross Connect Module, 110 Type C5, Material Pre-approved Part # Hubbell P/N - 110CB5PR10 (single piece)	each				
2146	Cross Connect Module, 110 Type C4-C5, Labor	each				
2147	Cross Connect Block, 6-110 Type, 64 Pr. w/6-110 C4's, Mat. Pre-approved Part # Hubbell P/N - 6110FTK64WL	each				
2148	Cross Connect Block, 6-110 Type, 64 Pr. w/6-110 C4's, Lab.	each				

2149	Cross Connect Block, 6-110 Type, 192 Pr. w/6-110 C4's, Mat. Pre-approved Part # Hubbell P/N - 6110FTK192WL	each				
2150	Cross Connect Block, 6-110 Type, 192 Pr. w/6-110 C4's, Lab.	each				
2151	Cross Connect Block, 6-110 Type Rack Mount, Material 2 X 64 Pair (128-pair) with C4's, labels, & troughs Pre-approved Part # Hubbell P/N - 6110RM1	each				
2152	Cross Connect Block, 6-110 Type Rack Mount, Labor	each				
2153	Cross Connect Module, 6-110 Type C4, Material (single piece) Pre-approved Part # Hubbell P/N - 6110CB4PR10	each				
2154	Cross Connect Module, 6-110 Type C4, Labor	each				
2155	Multiple Connect Block, 66B Block, 25 Pr., Material Pre-approved Part # Siemon P/N - S66B4-25	each				
2156	Multiple Connect Block, 66B Block, Labor	each				
2157	Multiple Connect Block, 110 Bridge Block, Material Pre-approved Part # Lucent Technologies P/N - 110AB1-25M	each				
2158	Multiple Connect Block, 110 Bridge Block, Labor	each				
2159	Cross Connect, 1 Pr., 10 Foot Avg., Material Pre-approved Part # General Cable P/N - 2113054	each				
2160	Cross Connect, 1 Pr., 10 Foot Avg., Labor	each				
2161	Cross Connect, 2 Pr., 10 Foot Avg., Material Pre-approved Part # General Cable P/N - 2114307	each				
2162	Cross Connect, 2 Pr., 10 Foot Avg., Labor	each				

2163	Cross Connect Wire, 1 Pr. Bulk, 1000 Foot, Material Pre-approved Part # General Cable P/N - 2113054	reel				
2164	Cross Connect Wire, 2 Pr. Bulk, 1000 Foot, Material Pre-approved Part # General Cable P/N - 2114307	reel				
2165	Cross Connect, 2 Position Bridging Clip, Material Pre-approved Part # Siemon P/N - SA1-xxxx (single piece)	each				
2166	Cross Connect, 2 Position Bridging Clip, labor	each				
2167	Termination, Binding-Post , 1 Pr., Labor	each				
2168	Termination, Binding-Post , 4 Pr., Labor	each				
2169	Termination, Insulation Displacement , 1 Pr., Labor	each				
2170	Termination, Insulation Displacement, 50 Pr., Labor	each				
2171	Termination, Insulation Displacement, 100 Pr., Labor	each				
2172	Termination, IDC CAT-3, 5E, or 6+, 4 Pr., Labor	each				
2173	Termination, IDC CAT- 3, 5E, or 6+, 25 Pr., Labor	each				
2174	Telco Cable, 25 Pair, M-F, 5' Long, Material Pre-approved Part #Varitronics P/N - VTC-PVC-025-PC-005-G-U-C3	each				
2175	Telco Cable, 25 Pair, M-M, 5' Long, Material Pre-approved Part # Varitronics P/N - VTC-PVC-025-PP-005-G-U-C3	each				
2176	Telco Cable, 25 Pair, F-F, 5' Long, Material Pre-approved Part # Varitronics P/N - VTC-PVC-025-CC-005-G-U-C3	each				
2177	Telco Cable, 25 Pair, F-O, 5' Long, Material Pre-approved Part # Varitronics P/N - VTC-PVC-025-CX-005-G-U-C3	each				

2178	Telco Cable, 25 Pair, M-O, 5' Long, Material Pre-approved Part # Varitronics P/N - VTC-PVC-025-PX-005-G-U-C3	each				
2179	Telco Cable, 25 Pair, 5' Long, Labor	each				
2180	Telco Cable, 25 Pair, M-F, 10' Long, Material Pre-approved Part # Varitronics P/N - VTC-PVC-025-PC-010-G-U-C3	each				
2181	Telco Cable, 25 Pair, M-M, 10' Long, Material Pre-approved Part # Varitronics P/N - VTC-PVC-025-PP-010-G-U-C3	each				
2182	Telco Cable, 25 Pair, F-F, 10' Long, Material Pre-approved Part # Varitronics P/N - VTC-PVC-025-CC-010-G-U-C3	each				
2183	Telco Cable, 25 Pair, F-O, 10' Long, Material Pre-approved Part # Varitronics P/N - VTC-PVC-025-CX-010-G-U-C3	each				
2184	Telco Cable, 25 Pair, M-O, 10' Long, Material Pre-approved Part # Varitronics P/N - VTC-PVC-025-PX-010-G-U-C3	each				
2185	Telco Cable, 25 Pair, 10' Long, Labor	each				
2186	Telco Cable, 25 Pair, M-F, 15' Long Material Pre-approved Part # Varitronics P/N - VTC-PVC-025-PC-015-G-U-C3	each				
2187	Telco Cable, 25 Pair, M-M, 15' Long, Material Pre-approved Part # Varitronics P/N - VTC-PVC-025-PP-015-G-U-C3	each				
2188	Telco Cable, 25 Pair, F-F, 15' Long, Material Pre-approved Part # Varitronics P/N - VTC-PVC-025-CC-015-G-U-C3	each				
2189	Telco Cable, 25 Pair, F-O, 15' Long, Material Pre-approved Part # Varitronics P/N - VTC-PVC-025-CX-015-G-U-C3	each				
2190	Telco Cable, 25 Pair, M-O, 15' Long, Material	each				

	Pre-approved Part # Varitronics P/N - VTC-PVC-025-PX-015-G-U-C3					
2191	Telco Cable, 25 Pair, 15' Long, Labor	each				
2192	Telco Cable, 25 Pair, M-F, 25' Long Material Pre-approved Part # Varitronics P/N - VTC-PVC-025-PC-025-G-U-C3	each				
2193	Telco Cable, 25 Pair, M-M, 25' Long, Material Pre-approved Part # Varitronics P/N - VTC-PVC-025-PP-025-G-U-C3	each				
2194	Telco Cable, 25 Pair, F-F, 25' Long, Material Pre-approved Part # Varitronics P/N - VTC-PVC-025-CC-025-G-U-C3	each				
2195	Telco Cable, 25 Pair, F-O, 25' Long, Material Pre-approved Part # Varitronics P/N - VTC-PVC-025-CX-025-G-U-C3	each				
2196	Telco Cable, 25 Pair, M-O, 25' Long, Material Pre-approved Part # Varitronics P/N - VTC-PVC-025-PX-025-G-U-C3	each				
2197	Telco Cable, 25 Pair, 25' Long, Labor	each				
2198	Telco Connector, 50 Pin, Female, Material Pre-approved Part # AMP P/N - 229913-1	each				
2199	Telco Connector, 50 Pin, Male, Material Pre-approved Part # AMP P/N - 229912-1	each				
2200	Telco Connector, 50 Pin, M or F, Labor	each				
2201	Telco To Modular Jack Adapter, 4 Pin, Material Pre-approved Part # Ortronics P/N - OR-8120F153AM2	each				
2202	Telco To Modular Jack Adapter, 6 Pin, Material Pre-approved Part # Ortronics P/N - OR-8120F153AM6	each				
2203	Telco To Modular Jack Adapter, 8 Pin, Material	each				

	Pre-approved Part # Ortronics P/N - OR-8120F259A					
2204	Telco To Modular Plug Adapter, 4 Pin, Material Pre-approved Part # Ortronics P/N - OR-8120M153AM2	each				
2205	Telco To Modular Plug Adapter, 6 Pin, Material Pre-approved Part # Ortronics P/N - OR-8120M153AM6	each				
2206	Telco To Modular Plug Adapter, 8 Pin, Material Pre-approved Part # Ortronics P/N - OR-8120M259A	each				
2207	Telco To Modular Jack/Plug Adapter, Labor	each				
2208	Modular splitter, 568B plug to two (2) USOC jacks, RJ-45, Mat. Pre-approved Part # Siemon P/N - YA4-U2-U2	each				
2209	Modular splitter, 568B plug to four (4) USOC jacks, RJ-45, Mat. Pre-approved Part # Siemon P/N - YA4-4U1	each				
2210	Modular splitter, 568B two or four-way, RJ-45, Labor	each				
	FIBER OPTIC UNITS					
3001	Multi Mode 2 Fiber, UL-OFNR, Indoor, Material Pre-approved Part # Avaya P/N - ABC-002D-LRX	ft				
3002	Multi Mode 6 Fiber, UL-OFNR, Indoor, Material Pre-approved Part # Avaya P/N - ABC-006D-LRX	ft				
3003	Multi Mode 12 Fiber, UL-OFNR, Indoor, Material Pre-approved Part # Avaya P/N - ABC-012D-LRX	ft				
3004	Multi Mode 24 Fiber, UL-OFNR, Indoor, Material Pre-approved Part # Avaya P/N - ABC-024D-LRX	ft				
3005	Single Mode 2 Fiber, UL-OFNR, Indoor, Material	ft				

	Pre-approved Part # Avaya P/N - ABC-002D-SRX					
3006	Single Mode 6 Fiber, UL-OFNR, Indoor, Material Pre-approved Part # Avaya P/N - ABC-006D-SRX	ft				
3007	Single Mode 12 Fiber, UL-OFNR, Indoor, Material Pre-approved Part # Avaya P/N - ABC-012D-SRX	ft				
3008	Single Mode 24 Fiber, UL-OFNR, Indoor, Material Pre-approved Part # Avaya P/N - ABC-024D-SRX	ft				
3009	Composite Fiber, 12 MM & 6 SM , UL-OFNR, Indoor, Mat. Pre-approved Part # Avaya P/N - ACC-06/12-S/LRX	ft				
3010	Composite Fiber, 24 MM & 12 SM , UL-OFNR, Indoor, Mat. Pre-approved Part # Avaya P/N - ACC-12/24-S/LRX	ft				
3011	Multi Mode 2 Fiber, UL-OFNP, Plenum, Material Pre-approved Part # Avaya P/N - ABC-002D-LPX	ft				
3012	Multi Mode 6 Fiber, UL-OFNP, Plenum, Material Pre-approved Part # Avaya P/N - ABC-006D-LPX	ft				
3013	Multi Mode 12 Fiber, UL-OFNP, Plenum, Material Pre-approved Part # Avaya P/N - ABC-012D-LPX	ft				
3014	Multi Mode 24 Fiber, UL-OFNP, Plenum, Material Pre-approved Part # Avaya P/N - ABC-024D-LPX	ft				
3015	Single Mode 2 Fiber, UL-OFNP, Plenum, Material Pre-approved Part # Avaya P/N - ABC-002D-SPX	ft				
3016	Single Mode 6 Fiber, UL-OFNP, Plenum, Material Pre-approved Part # Avaya P/N - ABC-006D-SPX	ft				
3017	Single Mode 12 Fiber, UL-OFNP, Plenum, Material	ft				

	Pre-approved Part # Avaya P/N - ABC-012D-SPX					
3018	Single Mode 24 Fiber, UL-OFNP, Plenum, Material Pre-approved Part # Avaya P/N - ABC-024D-SPX	ft				
3019	Composite Fiber, 12 MM & 6 SM , UL-OFNP Plenum, Material Pre-approved Part # Avaya P/N - ACC-06/12-S/LPX	ft				
3020	Composite Fiber, 24 MM & 12 SM , UL-OFNP Plenum, Material Pre-approved Part # Avaya P/N - ACC-12/24-S/LPX	ft				
3021	Indoor Fiber, any size, Riser or Plenum, Labor Single	ft				
3022	Indoor Fiber, any size, Riser or Plenum, Labor Multiple	ft				
3023	Multi Mode 6 Fiber, Filled Riser, In/Out, Material Pre-approved Part # Fitel P/N - AT-RU91206-006	ft				
3024	Multi Mode 12 Fiber, Filled Riser, In/Out, Material Pre-approved Part # Fitel P/N - AT-RU91206-012	ft				
3025	Multi Mode 24 Fiber, Filled Riser In/Out, Material Pre-approved Part # Fitel P/N - AT-RU91206-024	ft				
3026	Multi Mode 36 Fiber, Filled Riser, In/Out, Material Pre-approved Part # Fitel P/N - AT-RU91206-036	ft				
3027	Multi Mode 48 Fiber, Filled Riser, In/Out, Material Pre-approved Part # Fitel P/N - AT-RU91206-048	ft				
3028	Multi Mode 72 Fiber, Filled Riser, In/Out, Material Pre-approved Part # Fitel P/N - AT-RU91206-072	ft				
3029	Multi Mode 96 Fiber, Filled Riser, In/Out, Material Pre-approved Part # Fitel P/N - AT-RU91206-096	ft				

3030	Multi Mode 144 Fiber, Filled Riser, In/Out, Material Pre-approved Part # Fitel P/N - AT-RU91206-144	ft				
3031	Single Mode 6 Fiber, Filled Riser, In/Out, Material Pre-approved Part # Fitel P/N - AT-3401206-006	ft				
3032	Single Mode 12 Fiber, Filled Riser, In/Out, Material Pre-approved Part # Fitel P/N - AT-3401206-012	ft				
3033	Single Mode 24 Fiber, Filled Riser, In/Out, Material Pre-approved Part # Fitel P/N - AT-3401206-024	ft				
3034	Single Mode 36 Fiber, Filled Riser, In/Out, Material Pre-approved Part # Fitel P/N - AT-3401206-036	ft				
3035	Single Mode 48 Fiber, Filled Riser, In/Out, Material Pre-approved Part # Fitel P/N - AT-3401206-048	ft				
3036	Single Mode 72 Fiber, Filled Riser, In/Out, Material Pre-approved Part # Fitel P/N - AT-3401206-072	ft				
3037	Single Mode 96 Fiber, Filled Riser, In/Out, Material Pre-approved Part # Fitel P/N - AT-3401206-096	ft				
3038	Single Mode 144 Fiber, Filled Riser, In/Out, Material Pre-approved Part # Fitel P/N - AT-3401206-144	ft				
3039	Comp. Fiber, 12 MM & 6 SM, Filled Riser, In/Out, Material Pre-approved Part # Fitel P/N - AT-XUR1206-018-12/6-34	ft				
3040	Comp. Fiber, 24 MM & 12 SM, Filled Riser, In/Out, Material Pre-approved Part # Fitel P/N - AT-XUR1206-036-24/12-34	ft				
3041	Comp. Fiber, 48 MM & 24 SM, Filled Riser, In/Out, Material Pre-approved Part # Fitel P/N - AT-XUR1206-072-48/12-34	ft				

3042	Multi Mode 6 Fiber, UL-OFNP, Outdoor Plenum, Material Pre-approved Part # BerkTek P/N - LTP006CB3510/25	ft				
3043	Multi Mode 12 Fiber, UL-OFNP, Outdoor Plenum, Material Pre-approved Part # BerkTek P/N - LTP012CB3510/25	ft				
3044	Multi Mode 24 Fiber, UL-OFNP, Outdoor Plenum, Material Pre-approved Part # BerkTek P/N - LTP6B024CB3510/25	ft				
3045	Multi Mode 36 Fiber, UL-OFNP, Outdoor Plenum, Material Pre-approved Part # BerkTek P/N - LTP6B036CB3510/25	ft				
3046	Multi Mode 48 Fiber, UL-OFNP, Outdoor Plenum, Material Pre-approved Part # BerkTek P/N - LTP12B048CB3510/25	ft				
3047	Multi Mode 72 Fiber, UL-OFNP, Outdoor Plenum, Material Pre-approved Part # BerkTek P/N - LTP12B072CB3510/25	ft				
3048	Multi Mode 144 Fiber, UL-OFNP, Outdoor Plenum, Material Pre-approved Part # BerkTek P/N - LTP12B144CB3510/25	ft				
3049	Single Mode 6 Fiber, UL-OFNP, Outdoor Plenum, Material Pre-approved Part # BerkTek P/N - LTP006CB3510/25	ft				
3050	Single Mode 12 Fiber, UL-OFNP, Outdoor Plenum, Material Pre-approved Part # BerkTek P/N - LTP012CB3510/25	ft				
3051	Single Mode 24 Fiber, UL-OFNP, Outdoor Plenum, Material Pre-approved Part # BerkTek P/N - LTP6B024CB3510/25	ft				
3052	Single Mode 36 Fiber, UL-OFNP, Outdoor Plenum, Material Pre-approved Part # BerkTek P/N - LTP6B036CB3510/25	ft				
3053	Single Mode 48 Fiber, UL-OFNP, Outdoor Plenum, Material Pre-approved Part # BerkTek P/N - LTP12B048CB3510/25	ft				

3054	Single Mode 72 Fiber, UL-OFNP, Outdoor Plenum, Material Pre-approved Part # BerkTek P/N - LTP12B072CB3510/25	ft				
3055	Single Mode 96 Fiber, UL-OFNP, Outdoor Plenum, Material Pre-approved Part # BerkTek P/N - LTP12B096CB3510/25	ft				
3056	Single Mode 144 Fiber, UL-OFNP, Outdoor Plenum, Material Pre-approved Part # BerkTek P/N - LTP12B144CB3510/25	ft				
3057	Comp. Fiber, 12 MM & 6 SM, UL-OFNP, Outdoor Plen., Mat. Pre-approved Part # BerkTek P/N - LTP018-012CB/006AB	ft				
3058	Comp. Fiber, 24 MM & 12 SM, UL-OFNP, Outdoor Plen., Mat. Pre-approved Part # BerkTek P/N - LTP036-024CB/012B	ft				
3059	Comp. Fiber, 48 MM & 24 SM, UL-OFNP, Outdoor Plen., Mat. Pre-approved Part # BerkTek P/N - LTP072-048CB/024B	ft				
3060	Outdoor Fiber, Any size, Labor	ft				
3061	Fiber Term. Cabinet, 12 Port, Rack Mount, Material Pre-approved Part # Corning P/N - CCH-01U	each				
3062	Fiber Term. Cabinet, 12 Port, Rack Mount, Labor	each				
3063	Fiber Term. Cabinet, 24 Port, Rack Mount, Material Pre-approved Part # Corning P/N - CCH-02U	each				
3064	Fiber Term. Cabinet, 24 Port, Rack Mount, Labor	each				
3065	Fiber Term. Cabinet, 36 Port, Rack Mount, Material Pre-approved Part # Corning P/N - CCH-03U + CCH-TOP-CVR	each				
3066	Fiber Term. Cabinet, 36 Port, Rack Mount, Labor	each				

3067	Fiber Term. Cabinet, 72 Port, Rack Mount, Material Pre-approved Part # Corning P/N - CCH-04U + CCH-TOP-CVR	each				
3068	Fiber Term. Cabinet, 72 Port, Rack Mount, Labor	each				
3069	Fiber Splice Cabinet, Up To 24 Port, Rack Mount, Material Pre-approved Part # Corning P/N - CCS-03U	each				
3070	Fiber Splice Cabinet, Up To 24 Port, Rack Mount, Labor	each				
3071	Fiber Splice Cabinet, Up To 72 Port, Rack Mount, Material Pre-approved Part # Corning P/N - CSH-03U	each				
3072	Fiber Splice Cabinet, Up To 72 Port, Rack Mount, Labor	each				
3073	Fiber Splice Cabinet, Up To 144 Port, Rack Mount, Material Pre-approved Part # Corning P/N - CSH-03U	each				
3074	Fiber Splice Cabinet, Up To 144 Port, Rack Mount, Labor	each				
3075	Fiber Term. Cabinet, 12 Port, Wall Mount, Material Pre-approved Part # Corning P/N - WCH-02P	each				
3076	Fiber Term. Cabinet, 12 Port, Wall Mount, Labor	each				
3077	Fiber Term. Cabinet, 24 Port, Wall Mount, Material Pre-approved Part # Corning P/N - WCH-04P	each				
3078	Fiber Term. Cabinet, 24 Port, Wall Mount, Labor	each				
3079	Fiber Term. Cabinet, 36 Port, Wall Mount, Material Pre-approved Part # Corning P/N - WCH-06P	each				
3080	Fiber Term. Cabinet, 36 Port, Wall Mount, Labor	each				

3081	Fiber Term. Cabinet, 48 Port, Wall Mount, Material Pre-approved Part # Corning P/N - WCH08P	each				
3082	Fiber Term. Cabinet, 48 Port, Wall Mount, Labor	each				
3083	Fiber Term. Cabinet, 72 Port, Wall Mount, Material Pre-approved Part # Corning P/N - WCH-12P	each				
3084	Fiber Term. Cabinet, 72 Port, Wall Mount, Labor	each				
3085	Fiber Term. Cabinet, 12 Port, Environmental, Material Pre-approved Part # Corning P/N - EDC-02P-NH	each				
3086	Fiber Term. Cabinet, 12 Port, Environmental, Labor	each				
3087	Fiber Term. Cabinet, 36 Port, Environmental, Material Pre-approved Part # Corning P/N - EDC-06P-NH	each				
3088	Fiber Term. Cabinet, 36 Port, Environmental, Labor	each				
3089	Fiber Term. Cabinet, 72 Port, Environmental, Material Pre-approved Part # Corning P/N - EDC-12P-NH	each				
3090	Fiber Term. Cabinet, 72 Port, Environmental, Labor	each				
3091	Fiber Coupler Panel, With 6 ST Couplers MM, Material Pre-approved Part # Corning P/N - CCH-CP06-15	each				
3092	Fiber Coupler Panel, With 3 SC Duplex Couplers MM, Mat. Pre-approved Part # Corning P/N - CCH-CP06-57	each				
3093	Fiber Coupler Panel, With 3 MT-RJ Duplex Couplers MM, Mat. Pre-approved Part # Corning P/N - CCH-CP06-97	each				
3094	Fiber Coupler Panel, With 6 ST Couplers SM, Material	each				

	Pre-approved Part # Corning P/N - CCH-CP06-19					
3095	Fiber Coupler Panel, With 3 SC Duplex Couplers SM, Mat. Pre-approved Part # Corning P/N - CCH-CP06-59	each				
3096	Fiber Coupler Panel, With 3 MT-RJ Duplex Couplers SM, Mat. Pre-approved Part # Corning P/N - CCH-CP06-98	each				
3097	Fiber Coupler Panel, With 6 ST Duplex Couplers MM, Mat. Pre-approved Part # Corning P/N - CCH-CP12-15	each				
3098	Fiber Coupler Panel, With 6 SC Duplex Couplers MM, Mat. Pre-approved Part # Corning P/N - CCH-CP12-57	each				
3099	Fiber Coupler Panel, With 6 MT-RJ Duplex Couplers MM, Mat. Pre-approved Part # Corning P/N - CCH-CP12-97	each				
3100	Fiber Coupler Panel, With 6 ST Duplex Couplers SM, Mat. Pre-approved Part # Corning P/N - CCH-CP12-19	each				
3101	Fiber Coupler Panel, With 6 SC Duplex Couplers SM, Mat. Pre-approved Part # Corning P/N - CCH-CP12-59	each				
3102	Fiber Coupler Panel, With 6 MT-RJ Duplex Couplers SM, Mat. Pre-approved Part # Corning P/N - CCH-CP12-98	each				
3103	Fiber Coupler Panel, Blank, Material Pre-approved Part # Corning P/N - CCH-BLNK	each				
3104	Fiber Coupler Panel, MM or SM, Labor	each				
3105	Fiber Breakout Kit, In/Outdoor Fiber, Material Pre-approved Part # Corning P/N - SFK-P-xx-xxx-x	each				
3106	Fiber Breakout Kit, In/Outdoor Fiber, Labor	each				

3107	Fiber Termination, ST Connector MM, Material Pre-approved Part # Corning P/N - 95-101-44	each				
3108	Fiber Termination, ST Connector MM, Labor	each				
3109	Fiber Termination, SC Connector MM, Material Pre-approved Part # Corning P/N - 95-100-48	each				
3110	Fiber Termination, SC Connector MM, Labor	each				
3111	Fiber Termination, MT-RJ Connector MM, Material Pre-approved Part # Corning P/N - 91-100-97	each				
3112	Fiber Termination, MT-RJ Connector MM, Labor	each				
3113	Fiber Termination, ST Connector SM, Material Pre-approved Part # Corning P/N - 95-251-06	each				
3114	Fiber Termination, ST Connector SM, Labor	each				
3115	Fiber Termination, SC Connector SM, Material Pre-approved Part # Corning P/N - 95-250-08	each				
3116	Fiber Termination, SC Connector SM, Labor	each				
3117	Fiber Termination, MT-RJ Connector SM, Material Pre-approved Part # Corning P/N - 91-200-97	each				
3118	Fiber Termination, MT-RJ Connector SM, Labor	each				
3119	Fusion Splice, MM or SM, Per Fiber, Material Pre-approved Part # Siecor P/N - 2806031-01 (single piece)	each				
3120	Fusion Splice, MM or SM, Per Fiber, Labor	each				

3121	Mechanical Splice, MM or SM, Per Fiber, Material Pre-approved Part # Corning Unicam Series	each				
3122	Mechanical Splice, MM or SM, Per Fiber, Labor	each				
3123	Fiber Splice Case, Up To 24 Strand, Indoor, Material Pre-approved Part # 3M P/N - 2178-S/FR + (1) 2524x	each				
3124	Fiber Splice Case, Up To 24 Strand, Indoor, Labor	each				
3125	Fiber Splice Case, Up To 72 Strand, Indoor, Material Pre-approved Part # 3M P/N - 2178-LS/FR + (3) 2524x	each				
3126	Fiber Splice Case, Up To 72 Strand, Indoor, Labor	each				
3127	Fiber Splice Case, Up To 144 Strand, Indoor, Material Pre-approved Part # 3M 2178-LS/FR + (6) 2524x	each				
3128	Fiber Splice Case, Up To 144 Strand, Indoor, Labor	each				
3129	Fiber Splice Tray, Fusion, 24 Strand, Material Pre-approved Part # 3M P/N - 2524-FT	each				
3130	Fiber Splice Tray, Fusion, 24 Strand, Labor	each				
3131	Fiber Jumper MM, Duplex, ST/ST, 1 Meter, Material Pre-approved Part # Corning P/N - 505002K7141001M	each				
3132	Fiber Jumper MM, Duplex, ST/ST, 2 Meter, Material Pre-approved Part # Corning P/N - 505002K7141002M	each				
3133	Fiber Jumper MM, Duplex, ST/ST, 3 Meter, Material Pre-approved Part # Corning P/N - 505002K7141003M	each				
3134	Fiber Jumper MM, Duplex, ST/ST, 5 Meter, Material	each				

	Pre-approved Part # Corning P/N - 505002K7141005M					
3135	Fiber Jumper MM, Duplex, ST/ST, 8 Meter, Material Pre-approved Part # Corning P/N - 505002K7141008M	each				
3136	Fiber Jumper MM, Duplex, ST/ST, 10 Meter, Material Pre-approved Part # Corning P/N - 505002K7141010M	each				
3137	Fiber Jumper MM, Duplex, ST/ST, 15 Meter, Material Pre-approved Part # Corning P/N - 505002K7141015M	each				
3138	Fiber Jumper MM, Duplex, ST/ST, 25 Meter, Material Pre-approved Part # Corning P/N - 505002K7141025M	each				
3139	Fiber Jumper MM, Duplex, ST/ST, 30 Meter, Material Pre-approved Part # Corning P/N - 505002K7141030M	each				
3140	Fiber Jumper MM, Duplex, SC/ST, 1 Meter, Material Pre-approved Part # Corning P/N - 395002K7141001M	each				
3141	Fiber Jumper MM, Duplex, SC/ST, 2 Meter, Material Pre-approved Part # Corning P/N - 395002K7141002M	each				
3142	Fiber Jumper MM, Duplex, SC/ST, 3 Meter, Material Pre-approved Part # Corning P/N - 395002K7141003M	each				
3143	Fiber Jumper MM, Duplex, SC/ST, 5 Meter, Material Pre-approved Part # Corning P/N - 395002K7141005M	each				
3144	Fiber Jumper MM, Duplex, SC/ST, 8 Meter, Material Pre-approved Part # Corning P/N - 395002K7141008M	each				
3145	Fiber Jumper MM, Duplex, SC/ST, 10 Meter, Material Pre-approved Part # Corning P/N - 395002K7141010M	each				
3146	Fiber Jumper MM, Duplex, SC/ST, 15 Meter, Material	each				

	Pre-approved Part # Corning P/N - 395002K7141015M					
3147	Fiber Jumper MM, Duplex, SC/ST, 25 Meter, Material Pre-approved Part # Corning P/N - 395002K7141025M	each				
3148	Fiber Jumper MM, Duplex, SC/ST, 30 Meter, Material Pre-approved Part # Corning P/N - 395002K7141030M	each				
3149	Fiber Jumper MM, Duplex, SC/SC, 1 Meter, Material Pre-approved Part # Corning P/N - 393902K7141001M	each				
3150	Fiber Jumper MM, Duplex, SC/SC, 2 Meter, Material Pre-approved Part # Corning P/N - 393902K7141002M	each				
3151	Fiber Jumper MM, Duplex, SC/SC, 3 Meter, Material Pre-approved Part # Corning P/N - 393902K7141003M	each				
3152	Fiber Jumper MM, Duplex, SC/SC, 5 Meter, Material Pre-approved Part # Corning P/N - 393902K7141005M	each				
3153	Fiber Jumper MM, Duplex, SC/SC, 8 Meter, Material Pre-approved Part # Corning P/N - 393902K7141008M	each				
3154	Fiber Jumper MM, Duplex, SC/SC, 10 Meter, Material Pre-approved Part # Corning P/N - 393902K7141010M	each				
3155	Fiber Jumper MM, Duplex, SC/SC, 15 Meter, Material Pre-approved Part # Corning P/N - 393902K7141015M	each				
3156	Fiber Jumper MM, Duplex, SC/SC, 25 Meter, Material Pre-approved Part # Corning P/N - 393902K7141025M	each				
3157	Fiber Jumper MM, Duplex, SC/SC, 30 Meter, Material Pre-approved Part # Corning P/N - 393902K7141030M	each				
3158	Fiber Jumper MM, Duplex, ST/MT-RJ, 1 Meter, Material	each				

	Pre-approved Part # Corning P/N - 509702KJ141001M					
3159	Fiber Jumper MM, Duplex, ST/MT-RJ, 2 Meter, Material Pre-approved Part # Corning P/N - 509702KJ141002M	each				
3160	Fiber Jumper MM, Duplex, ST/MT-RJ, 3 Meter, Material Pre-approved Part # Corning P/N - 509702KJ141003M	each				
3161	Fiber Jumper MM, Duplex, ST/MT-RJ, 5 Meter, Material Pre-approved Part # Corning P/N - 509702KJ141005M	each				
3162	Fiber Jumper MM, Duplex, ST/MT-RJ, 8 Meter, Material Pre-approved Part # Corning P/N - 509702KJ141008M	each				
3163	Fiber Jumper MM, Duplex, ST/MT-RJ, 10 Meter, Material Pre-approved Part # Corning P/N - 509702KJ141010M	each				
3164	Fiber Jumper MM, Duplex, ST/MT-RJ, 15 Meter, Material Pre-approved Part # Corning P/N - 509702KJ141015M	each				
3165	Fiber Jumper MM, Duplex, ST/MT-RJ, 25 Meter, Material Pre-approved Part # Corning P/N - 509702KJ141025M	each				
3166	Fiber Jumper MM, Duplex, ST/MT-RJ, 30 Meter, Material Pre-approved Part # Corning P/N - 509702KJ141030M	each				
3167	Fiber Jumper MM, Duplex, SC/MT-RJ, 1 Meter, Material Pre-approved Part # Corning P/N - 399702KJ141001M	each				
3168	Fiber Jumper MM, Duplex, SC/MT-RJ, 2 Meter, Material Pre-approved Part # Corning P/N - 399702KJ141002M	each				
3169	Fiber Jumper MM, Duplex, SC/MT-RJ, 3 Meter, Material Pre-approved Part # Corning P/N - 399702KJ141003M	each				
3170	Fiber Jumper MM, Duplex, SC/MT-RJ, 5 Meter, Material	each				

	Pre-approved Part # Corning P/N - 399702KJ141005M					
3171	Fiber Jumper MM, Duplex, SC/MT-RJ, 8 Meter, Material Pre-approved Part # Corning P/N - 399702KJ141008M	each				
3172	Fiber Jumper MM, Duplex, SC/MT-RJ, 10 Meter, Material Pre-approved Part # Corning P/N - 399702KJ141010M	each				
3173	Fiber Jumper MM, Duplex, SC/MT-RJ, 15 Meter, Material Pre-approved Part # Corning P/N - 399702KJ141015M	each				
3174	Fiber Jumper MM, Duplex, SC/MT-RJ, 25 Meter, Material Pre-approved Part # Corning P/N - 399702KJ141025M	each				
3175	Fiber Jumper MM, Duplex, SC/MT-RJ, 30 Meter, Material Pre-approved Part # Corning P/N - 399702KJ141030M	each				
3176	Fiber Jumper MM, Duplex, MT-RJ/MT-RJ, 1 Meter, Material Pre-approved Part # Corning P/N - 979702KJ141001M	each				
3177	Fiber Jumper MM, Duplex, MT-RJ/MT-RJ, 2 Meter, Material Pre-approved Part # Corning P/N - 979702KJ141002M	each				
3178	Fiber Jumper MM, Duplex, MT-RJ/MT-RJ, 3 Meter, Material Pre-approved Part # Corning P/N - 979702KJ141003M	each				
3179	Fiber Jumper MM, Duplex, MT-RJ/MT-RJ, 5 Meter, Material Pre-approved Part # Corning P/N - 979702KJ141005M	each				
3180	Fiber Jumper MM, Duplex, MT-RJ/MT-RJ, 8 Meter, Material Pre-approved Part # Corning P/N - 979702KJ141008M	each				
3181	Fiber Jumper MM, Duplex, MT-RJ/MT-RJ, 10 Meter, Material Pre-approved Part # Corning P/N - 979702KJ141010M	each				
3182	Fiber Jumper MM, Duplex, MT-RJ/MT-RJ, 15 Meter, Material	each				

	Pre-approved Part # Corning P/N - 979702KJ141015M					
3183	Fiber Jumper MM, Duplex, MT-RJ/MT-RJ, 25 Meter, Material Pre-approved Part # Corning P/N - 979702KJ141025M	each				
3184	Fiber Jumper MM, Duplex, MT-RJ/MT-RJ, 30 Meter, Material Pre-approved Part # Corning P/N - 979702KJ141030M	each				
3185	Fiber Jumper SM, Duplex, ST/ST, 1 Meter, Material Pre-approved Part # Corning P/N - 616102R7131001M	each				
3186	Fiber Jumper SM, Duplex, ST/ST, 2 Meter, Material Pre-approved Part # Corning P/N - 616102R7131002M	each				
3187	Fiber Jumper SM, Duplex, ST/ST, 3 Meter, Material Pre-approved Part # Corning P/N - 616102R7131003M	each				
3188	Fiber Jumper SM, Duplex, ST/ST, 5 Meter, Material Pre-approved Part # Corning P/N - 616102R7131005M	each				
3189	Fiber Jumper SM, Duplex, ST/ST, 8 Meter, Material Pre-approved Part # Corning P/N - 616102R7131008M	each				
3190	Fiber Jumper SM, Duplex, ST/ST, 10 Meter, Material Pre-approved Part # Corning P/N - 616102R7131010M	each				
3191	Fiber Jumper SM, Duplex, ST/ST, 15 Meter, Material Pre-approved Part # Corning P/N - 616102R7131015M	each				
3192	Fiber Jumper SM, Duplex, ST/ST, 25 Meter, Material Pre-approved Part # Corning P/N - 616102R7131025M	each				
3193	Fiber Jumper SM, Duplex, ST/ST, 30 Meter, Material Pre-approved Part # Corning P/N - 616102R7131030M	each				
3194	Fiber Jumper SM, Duplex, SC/ST, 1 Meter, Material	each				

	Pre-approved Part # Corning P/N - 586102R7131001M					
3195	Fiber Jumper SM, Duplex, SC/ST, 2 Meter, Material Pre-approved Part # Corning P/N - 586102R7131002M	each				
3196	Fiber Jumper SM, Duplex, SC/ST, 3 Meter, Material Pre-approved Part # Corning P/N - 586102R7131003M	each				
3197	Fiber Jumper SM, Duplex, SC/ST, 5 Meter, Material Pre-approved Part # Corning 586102R7131005M	each				
3198	Fiber Jumper SM, Duplex, SC/ST, 8 Meter, Material Pre-approved Part # Corning P/N - 586102R7131008M	each				
3199	Fiber Jumper SM, Duplex, SC/ST, 10 Meter, Material Pre-approved Part # Corning P/N - 586102R7131010M	each				
3200	Fiber Jumper SM, Duplex, SC/ST, 15 Meter, Material Pre-approved Part # Corning P/N - 586102R7131015M	each				
3201	Fiber Jumper SM, Duplex, SC/ST, 25 Meter, Material Pre-approved Part # Corning P/N - 586102R7131025M	each				
3202	Fiber Jumper SM, Duplex, SC/ST, 30 Meter, Material Pre-approved Part # Corning P/N - 586102R7131030M	each				
3203	Fiber Jumper SM, Duplex, SC/SC, 1 Meter, Material Pre-approved Part # Corning P/N - 585802R7131001M	each				
3204	Fiber Jumper SM, Duplex, SC/SC, 2 Meter, Material Pre-approved Part # Corning P/N - 585802R7131002M	each				
3205	Fiber Jumper SM, Duplex, SC/SC, 3 Meter, Material Pre-approved Part # Corning P/N - 585802R7131003M	each				
3206	Fiber Jumper SM, Duplex, SC/SC, 5 Meter, Material	each				

	Pre-approved Part # Corning P/N - 585802R7131005M					
3207	Fiber Jumper SM, Duplex, SC/SC, 8 Meter, Material Pre-approved Part # Corning P/N - 585802R7131008M	each				
3208	Fiber Jumper SM, Duplex, SC/SC, 10 Meter, Material Pre-approved Part # Corning P/N - 585802R7131010M	each				
3209	Fiber Jumper SM, Duplex, SC/SC, 15 Meter, Material Pre-approved Part # Corning P/N - 585802R7131015M	each				
3210	Fiber Jumper SM, Duplex, SC/SC, 25 Meter, Material Pre-approved Part # Corning P/N - 585802R7131025M	each				
3211	Fiber Jumper SM, Duplex, SC/SC, 30 Meter, Material Pre-approved Part # Corning P/N - 585802R7131030M	each				
3212	Fiber Jumper SM, Duplex, ST/MT-RJ, 1 Meter, Material Pre-approved Part # Corning P/N - 619802RJ131001M	each				
3213	Fiber Jumper SM, Duplex, ST/MT-RJ, 2 Meter, Material Pre-approved Part # Corning P/N - 619802RJ131002M	each				
3214	Fiber Jumper SM, Duplex, ST/MT-RJ, 3 Meter, Material Pre-approved Part # Corning P/N - 619802RJ131003M	each				
3215	Fiber Jumper SM, Duplex, ST/MT-RJ, 5 Meter, Material Pre-approved Part # Corning P/N - 619802RJ131005M	each				
3216	Fiber Jumper SM, Duplex, ST/MT-RJ, 8 Meter, Material Pre-approved Part # Corning P/N - 619802RJ131008M	each				
3217	Fiber Jumper SM, Duplex, ST/MT-RJ, 10 Meter, Material Pre-approved Part # Corning P/N - 619802RJ131010M	each				
3218	Fiber Jumper SM, Duplex, ST/MT-RJ, 15 Meter, Material	each				

	Pre-approved Part # Corning P/N - 619802RJ131015M					
3219	Fiber Jumper SM, Duplex, ST/MT-RJ, 25 Meter, Material Pre-approved Part # Corning P/N - 619802RJ131025M	each				
3220	Fiber Jumper SM, Duplex, ST/MT-RJ, 30 Meter, Material Pre-approved Part # Corning P/N - 619802RJ131030M	each				
3221	Fiber Jumper SM, Duplex, SC/MT-RJ, 1 Meter, Material Pre-approved Part # Corning P/N - 599802RJ131001M	each				
3222	Fiber Jumper SM, Duplex, SC/MT-RJ, 2 Meter, Material Pre-approved Part # Corning P/N - 599802RJ131002M	each				
3223	Fiber Jumper SM, Duplex, SC/MT-RJ, 3 Meter, Material Pre-approved Part # Corning P/N - 599802RJ131003M	each				
3224	Fiber Jumper SM, Duplex, SC/MT-RJ, 5 Meter, Material Pre-approved Part # Corning P/N - 599802RJ131005M	each				
3225	Fiber Jumper SM, Duplex, SC/MT-RJ, 8 Meter, Material Pre-approved Part # Corning P/N - 599802RJ131008M	each				
3226	Fiber Jumper SM, Duplex, SC/MT-RJ, 10 Meter, Material Pre-approved Part # Corning P/N - 599802RJ131010M	each				
3227	Fiber Jumper SM, Duplex, SC/MT-RJ, 15 Meter, Material Pre-approved Part # Corning P/N - 599802RJ131015M	each				
3228	Fiber Jumper SM, Duplex, SC/MT-RJ, 25 Meter, Material Pre-approved Part # Corning P/N - 599802RJ131025M	each				
3229	Fiber Jumper SM, Duplex, SC/MT-RJ, 30 Meter, Material Pre-approved Part # Corning P/N - 599802RJ131030M	each				
3230	Fiber Jumper SM, Duplex, MT-RJ/MT-RJ, 1 Meter, Material	each				

	Pre-approved Part # Corning P/N - 989802RJ131001M					
3231	Fiber Jumper SM, Duplex, MT-RJ/MT-RJ, 2 Meter, Material Pre-approved Part # Corning P/N - 989802RJ131002M	each				
3232	Fiber Jumper SM, Duplex, MT-RJ/MT-RJ, 3 Meter, Material Pre-approved Part # Corning P/N - 989802RJ131003M	each				
3233	Fiber Jumper SM, Duplex, MT-RJ/MT-RJ, 5 Meter, Material Pre-approved Part # Corning P/N - 989802RJ131005M	each				
3234	Fiber Jumper SM, Duplex, MT-RJ/MT-RJ, 8 Meter, Material Pre-approved Part # Corning P/N - 989802RJ131008M	each				
3235	Fiber Jumper SM, Duplex, MT-RJ/MT-RJ, 10 Meter, Material Pre-approved Part # Corning P/N - 989802RJ131010M	each				
3236	Fiber Jumper SM, Duplex, MT-RJ/MT-RJ, 15 Meter, Material Pre-approved Part # Corning P/N - 989802RJ131015M	each				
3237	Fiber Jumper SM, Duplex, MT-RJ/MT-RJ, 25 Meter, Material Pre-approved Part # Corning P/N - 989802RJ131025M	each				
3238	Fiber Jumper SM, Duplex, MT-RJ/MT-RJ, 30 Meter, Material Pre-approved Part # Corning P/N - 989802RJ131030M	each				
3239	Fiber Jumper MM or SM, Duplex Cord, Labor	each				
	LEGACY SYSTEM UNITS					
4001	Coax Cable, RG-6, UL-CMR, Indoor, Material Pre-approved Part # Belden P/N - 9116R	ft				
4002	Coax Cable, RG-6, UL-CMP, Plenum, Material Pre-approved Part # Belden P/N - 9116P	ft				

4003	Coax Cable, RG-11, UL-CMR, Indoor, Material Pre-approved Part # Belden P/N – 9292	ft				
4004	Coax Cable, RG-11, UL-CMP, Plenum, Material Pre-approved Part # Belden P/N – 89292	ft				
4005	Coax Cable, DS-3, UL-CMR, Indoor, Material Pre-approved Part # Belden P/N – 734A1	ft				
4006	Coax Cable, DS-3, UL-CMP, Indoor, Material Pre-approved Part # Belden P/N – 734A1P	ft				
4007	Indoor Coax Cable, RG-6/11 & DS-3, Riser/Plenum, Labor Single	ft				
4008	Indoor Coax Cable, RG-6/11 & DS-3, Riser/Plenum, Labor Multi	ft				
4009	Coax Connector, Crimp "F" Plug, RG-6 CMR, Material Pre-approved Part # Thomas & Betts P/N - SNS6	each				
4010	Coax Connector, Crimp "F" Plug, RG-6 CMP Plen., Material Pre-approved Part # Thomas & Betts P/N - PL56CS	each				
4011	Coax Connector, Crimp "F" Plug, RG-11 CMR, Material Pre-approved Part # Thomas & Betts P/N - SNS11AS	each				
4012	Coax Connector, Crimp "F" Plug, RG-11 CMP Plen., Material Pre-approved Part # Thomas & Betts P/N - PL11CS	each				
4013	Coax Connector, Crimp "BNC" Plug, RG-6 CMR, Material Pre-approved Part # Trompeter P/N - UPL220-020	each				
4014	Coax Connector, Crimp "BNC" Plug, RG-6 CMP, Material Pre-approved Part # Trompeter P/N - UPL220-024	each				
4015	Coax Connector, Crimp "BNC" Plug, RG-11 CMR, Material	each				

	Pre-approved Part # Trompeter P/N - UPL2000-D5					
4016	Coax Connector, Crimp "BNC" Plug, RG-11 CMP, Material Pre-approved Part # Trompeter P/N - UPL2000-D16	each				
4017	Coax Connector, Crimp "BNC" Plug, DS-3 CMR, Material Pre-approved Part # Trompeter P/N - UPL220-025	each				
4018	Coax Connector, Crimp "BNC" Plug, DS-3 CMP, Material Pre-approved Part # Trompeter P/N - 105-1313-9	each				
4019	Coax Connector, Crimp BNC/"F" Plug, Labor	each				
4020	Balun, RG-58 to UTP, Material Pre-approved Part # AMP P/N - 555982-2	each				
4021	Balun, STP to UTP, 10/100Base-TX, Material Pre-approved Part # AMP P/N - 558420-1	each				
4022	Balun, STP to UTP, Token Ring, Material Pre-approved Part # AMP P/N - 555414-2	each				
4023	Balun, RG-58/STP to UTP, Labor	each				
	DATA/LAN UNITS					
5001	LAN Cable UTP, CAT-3 4-pair, UL-CMR, Indoor, Material Pre-approved Part # General Cable P/N - 2133017	ft				
5002	LAN Cable UTP, CAT-3 4-pair, UL-CMP Plenum, Material Pre-approved Part # General Cable P/N - 2131313	ft				
5003	LAN Cable UTP, CAT-5E 4-pair, UL-CMR, Indoor, Material Pre-approved Part # General Cable P/N - 5133xxxE (spec 8480)	ft				
5004	LAN Cable UTP, CAT-5E 4-pair, UL-CMP Plenum, Material	ft				

	Pre-approved Part # General Cable P/N - 5131xxxE (spec 8482)					
5005	LAN Cable UTP, CAT-6 4-pair , UL-CMR, Indoor Material Pre-approved Part # General Cable P/N - 7133xxx (spec 7251)	ft				
5006	LAN Cable UTP, CAT-6 4-pair, UL-CMP Plenum, Material Pre-approved Part # General Cable P/N - 7131xxx (spec 7252)	ft				
5007	LAN Cable UTP 4-pair, Indoor, UL-CMR/CMP , Labor Single	ft				
5008	LAN Cable UTP 4-pair, Indoor, UL-CMR/CMP , Labor Multiple	ft				
5009	LAN Cable UTP, CAT-5E 25-pair, UL-CMR, Indoor, Material Pre-approved Part # General Cable P/N - 5133xxxE (spec 8480)	ft				
5010	LAN Cable UTP, CAT-5E 25-pair, UL-CMP Plenum, Material Pre-approved Part # General Cable P/N - 5131xxxE (spec 8482)	ft				
5011	LAN Cable UTP 25-pair, Indoor, UL-CMR/CMP , Labor Single	ft				
5012	LAN Cable UTP 25-pair, Indoor, UL-CMR/CMP , Labor Multiple	ft				
5013	LAN Cable UTP, CAT-5E, Outdoor (direct buried) Material Pre-approved Part # Mohawk P/N – M57562	ft				
5014	LAN Cable UTP, CAT-5E, Outdoor (aerial) Material Pre-approved Part # Mohawk P/N – M57561	ft				
5015	LAN Cable UTP, CAT-5E, Outdoor Labor Single	ft				
5016	LAN Cable UTP, CAT-5E, Outdoor Labor Multiple	ft				
5017	CAT-3 Cable Run, UL-CMR PVC, Material Pre-approved Part # General Cable P/N - 2133017, Hubbell P/N - HXJ3xx, Hubbell P/N - IFP11xx, Steel City P/N - CDOW-TG, Hubbell P/N - PC3xx03,	each				

	Hubbell P/N - PC3xx16, terminate, cross-connect (if necessary), label, test, and document.					
5018	CAT-3 Cable Run, UL-CMP Plenum, Material Pre-approved Part # General Cable P/N - 2131313, Hubbell P/N - HXJ3xx, Hubbell P/N - IFP11xx, Steel City P/N - CDOW-TG, Hubbell P/N - PC3xx03, Hubbell P/N - PC3xx16, terminate, cross-connect (if necessary), label, test, and document.	each				
5019	CAT-3 Cable Run, PVC/Plenum, Labor	each				
5020	CAT-5E Cable Run, UL-CMR PVC, Material Pre-approved Part # General Cable P/N - 5133xxxE (spec 8480), Hubbell P/N - HXJ5Exx, Hubbell P/N - IFP11xx, Steel City P/N - CDOW-TG, Hubbell P/N - PC5EPxx03, Hubbell P/N - PC5EPxx16, terminate, cross-connect (if necessary), label, test, and document.	each				
5021	CAT-5E Cable Run, UL-CMP Plenum, Material Pre-approved Part # General Cable P/N - 5131xxxE (spec 8482), Hubbell P/N - HXJ5Exx, Hubbell P/N - IFP11xx, Steel City P/N - CDOW-TG, Hubbell P/N - PC5EPxx03, Hubbell P/N - PC5EPxx16, terminate, cross-connect (if necessary), label, test, and document.	each				
5022	CAT-5E Cable Run, PVC/Plenum, Labor	each				
5023	CAT-6+ Cable Run, UL-CMR PVC, Material Pre-approved Part # General Cable P/N - 7133xxx (spec 7251), Hubbell P/N - HXJ6xx, Hubbell P/N - IFP11xx, Steel City P/N - CDOW-TG, Hubbell P/N - PCX6xx03, Hubbell P/N - PCX6xx16, terminate, cross-connect (if necessary), label, test, and document.	each				

5024	CAT-6+ Cable Run, UL-CMP Plenum, Material Pre-approved Part # General Cable P/N - 7131xxx (spec 7252), Hubbell P/N - HXJ6xx, Hubbell P/N - IFP11xx, Steel City P/N - CDOW-TG, Hubbell P/N - PCX6xx03, Hubbell P/N - PCX6xx16, terminate, cross-connect (if necessary), label, test, and document.	each				
5025	CAT-6+ Cable Run, PVC/Plenum, Labor	each				
5026	Comm Outlet, 6P6C Voice Insert, Material Pre-approved Part # Hubbell P/N - HXJUxx	each				
5027	Comm Outlet, 8P8C Voice Insert, Material Pre-approved Part # Hubbell P/N - HXJU8xx	each				
5028	Comm Outlet, CAT-3 LAN Insert, Material Pre-approved Part # Hubbell P/N - HXJ3xx	each				
5029	Comm Outlet, CAT-5E LAN Insert, Material Pre-approved Part # Hubbell P/N - HXJ5Exx	each				
5030	Comm Outlet, CAT-6+ LAN Insert, Material Pre-approved Part # Hubbell P/N - HXJ6xx	each				
5031	Comm Outlet, Coax F Insert, Material Pre-approved Part # Hubbell P/N - SFFxx	each				
5032	Comm Outlet, Coax BNC Insert, Material Pre-approved Part # Hubbell P/N - SFBxx	each				
5033	Comm Outlet, RCA 110-style Insert, Material Pre-approved Part # Hubbell P/N - SFRCx110	each				
5034	Comm Outlet, S-Video 110-style Insert, Material Pre-approved Part # Hubbell P/N - SFSV110	each				

5035	Comm Outlet, Fiber Optic ST Insert, Material Pre-approved Part # Hubbell P/N - SFSTxx	each				
5036	Comm Outlet, Fiber Optic SC Insert, Material Pre-approved Part # Hubbell P/N - SFFSCxx	each				
5037	Comm Outlet, Fiber Optic MT-RJ Insert, Material Pre-approved Part # Hubbell P/N - FAMTRJKx	each				
5038	Comm Outlet, Jack Insert, Labor	each				
5039	Comm Outlet, Blank Insert, Material Pre-approved Part # Hubbell P/N - SFBx (single insert)	each				
5040	Comm Outlet, Blank Insert, Labor	each				
5041	Faceplate, 1 Port Single Gang Plastic, Material Pre-approved Part # Hubbell P/N - IFP11xx	each				
5042	Faceplate, 2 Port Single Gang Plastic, Material Pre-approved Part # Hubbell P/N - IFP12xx	each				
5043	Faceplate, 4 Port Single Gang Plastic, Material Pre-approved Part # Hubbell P/N - IFP14xx	each				
5044	Faceplate, 6 Port Single Gang Plastic, Material Pre-approved Part # Hubbell P/N - IFP16xx	each				
5045	Faceplate, 1 Port Single Gang SS, Material Pre-approved Part # Hubbell P/N - SSF11	each				
5046	Faceplate, 2 Port Single Gang SS, Material Pre-approved Part # Hubbell P/N - SSF12	each				
5047	Faceplate, 4 Port Single Gang SS, Material	each				

	Pre-approved Part # Hubbell P/N - SSF14					
5048	Faceplate, 6 Port Single Gang SS, Material Pre-approved Part # Hubbell P/N - SSF16	each				
5049	Faceplate, Wall Phone, Single Gang SS, Material Pre-approved Part # Hubbell P/N - P630S1G	each				
5050	Faceplate, Single Gang, Plastic or Stainless Steel, Labor	each				
5051	Faceplate, 6 Port Double Gang Plastic, Material Pre-approved Part # Hubbell P/N - IFP26xx	each				
5052	Faceplate, 12 Port Double Gang Plastic, Material Pre-approved Part # Hubbell P/N - IFP212xx	each				
5053	Faceplate, 6 Port Double SS, Material Pre-approved Part # Hubbell P/N - SSF206	each				
5054	Faceplate, 12 Port Double Gang SS, Material Pre-approved Part # Hubbell P/N - SSF212	each				
5055	Faceplate, Double Gang, Plastic or Stainless Steel, Labor	each				
5056	Faceplate, Blank, Single-Gang, Plastic, Material Pre-approved Part # Hubbell P/N - P14x	each				
5057	Faceplate, Blank, Single-Gang, SS, Material Pre-approved Part # Hubbell P/N - S14	each				
5058	Faceplate, Blank, Single-Gang, Plastic or Stainless, Labor	each				
5059	Faceplate, 3/8" Hole, Single-Gang, Plastic, Material Pre-approved Part # Hubbell P/N - P12x	each				
5060	Faceplate, 3/8" Hole, Single-Gang, SS, Material	each				

	Pre-approved Part # Hubbell P/N - S12					
5061	Faceplate, 3/8" Hole, Single-Gang, Plastic or Stainless, Labor	each				
5062	Faceplate, Elect. Opening, 2 Port, SG Plastic, Material Pre-approved Part # Hubbell P/N - IFP18x	each				
5063	Faceplate, Elect. Opening, 2 Port, SG Metal, Material Pre-approved Part # Hubbell P/N - HPWS8	each				
5064	Faceplate, Elect. Opening, Plastic or Stainless Steel, Labor	each				
5065	Faceplate, 106 frame/strap, 2 Port, Material Pre-approved Part # Hubbell P/N - BR106x	each				
5066	Faceplate, 106 frame/strap, 4 Port, Material Pre-approved Part # Hubbell P/N - Q106x	each				
5067	Faceplate, 106 frame/strap, Labor	each				
5068	Faceplate, Mod. Furniture, 2 Port, Material Pre-approved Part # Hubbell P/N - FP2xx	each				
5069	Faceplate, Mod. Furniture, 4 Port - Quad, Material Pre-approved Part # Hubbell P/N - FP4xx	each				
5070	Faceplate, Mod. Furniture, 4 Port - Linear, Material Pre-approved Part # Hubbell P/N - FP4Bxx	each				
5071	Faceplate, Mod. Furn., Labor	each				
5072	Faceplate, Surface Biscuit Box, 2 Port, Material Pre-approved Part # Hubbell P/N - ISM2xx	each				
5073	Faceplate, Surface Biscuit Box, 4 Port, Material Pre-approved Part # Hubbell P/N - ISM4xx	each				

5074	Faceplate, Surface Biscuit Box, Labor	each				
5075	Patch Panel, CAT-5E 110, on 89B Bracket, 12 Port, Material Pre-approved Part # Hubbell P/N - P5E12U	each				
5076	Patch Panel, CAT-5E 110, on 89B Bracket, 12 Port, Labor	each				
5077	Patch Panel, CAT-5E 110, Rack Mount, 24 Port, Material Pre-approved Part # Hubbell P/N - P5E24UE	each				
5078	Patch Panel, CAT-5E 110, Rack Mount, 48 Port, Material Pre-approved Part # Hubbell P/N - P5E48UE	each				
5079	Patch Panel, CAT-5E 110, Rack Mount, Labor	each				
5080	Patch Panel, CAT-6+ 110, Rack Mount, 8 Pin, 24 Port, Mat. Pre-approved Part # Hubbell P/N - P624U	each				
5081	Patch Panel, CAT-6+ 110, Rack Mount, 8 Pin, 48 Port, Mat. Pre-approved Part # Hubbell P/N - P648U	each				
5082	Patch Panel, CAT-6+ 110, Rack Mount, Labor	each				
5083	Patch Panel, Telco, Rack Mount, 8P8C, 24 Port, Material Pre-approved Part # Hubbell P/N - BRCMCC3560619	each				
5084	Patch Panel, Telco, Rack Mount, 8P8C, 24 Port, Labor	each				
5085	Patch Cord, CAT-3, 4 Pair, 3' Long, Material Pre-approved Part # Hubbell P/N - PC219	each				
5086	Patch Cord, CAT-3, 4 Pair, 7' Long, Material Pre-approved Part # Hubbell P/N - PC221	each				
5087	Patch Cord, CAT-3, 4 Pair, 14' Long, Material	each				

	Pre-approved Part # Hubbell P/N - PC224					
5088	Patch Cord, CAT-3, Labor	each				
5089	Patch Cord, CAT-5E, 4 Pair, 3' Long, Material Pre-approved Part # Hubbell P/N - PCX5Exx03	each				
5090	Patch Cord, CAT-5E, 4 Pair, 5' Long, Material Pre-approved Part # Hubbell P/N - PCX5Exx05	each				
5091	Patch Cord, CAT-5E, 4 Pair, 7' Long, Material Pre-approved Part # Hubbell P/N - PCX5Exx07	each				
5092	Patch Cord, CAT-5E, 4 Pair, 10' Long, Material Pre-approved Part # Hubbell P/N - PCX5Exx10	each				
5093	Patch Cord, CAT-5E, 4 Pair, 15' Long, Material Pre-approved Part # Hubbell P/N - PCX5Exx15	each				
5094	Patch Cord, CAT-5E, 4 Pair, 20' Long, Material Pre-approved Part # Hubbell P/N - PCX5Exx20	each				
5095	Patch Cord, CAT-5E, Labor	each				
5096	Patch Cord, CAT-6+, 4 Pair, 3' Long, Material Pre-approved Part # Hubbell P/N - PCX6xx03	each				
5097	Patch Cord, CAT-6+, 4 Pair, 5' Long, Material Pre-approved Part # Hubbell P/N - PCX6xx05	each				
5098	Patch Cord, CAT-6+, 4 Pair, 7' Long, Material Pre-approved Part # Hubbell P/N - PCX6xx07	each				
5099	Patch Cord, CAT-6+, 4 Pair, 10' Long, Material Pre-approved Part # Hubbell P/N - PCX6xx10	each				

5100	Patch Cord, CAT-6+, 4 Pair, 15' Long, Material Pre-approved Part # Hubbell P/N - PCX6xx15	each				
5101	Patch Cord, CAT-6+, 4 Pair, 20' Long, Material Pre-approved Part # Hubbell P/N - PCX6xx20	each				
5102	Patch Cord, CAT-6+, Labor	each				
5103	Modular Plug, 8 PIN, Solid Wire, CAT-5E, Material Pre-approved Part # AMP P/N - 5-569278-x	each				
5104	Modular Plug, 8 PIN, Stranded Wire, CAT-5E, Material Pre-approved Part # AMP P/N - 5-558530-x	each				
5105	Modular Plug, 8 PIN, Solid/Stranded Wire, CAT-5E, Labor	each				
5106	Modular Plug, 110 Style 1-pair, Solid/Stranded, CAT-5E, Mat. Pre-approved Part # Hubbell P/N - 110FPP1PR	each				
5107	Modular Plug, 110 Style, 1-pair, Solid/Stranded, CAT-5E, Labor	each				
5108	Modular Plug, 110 Style 4-pair, Solid/Stranded, CAT-5E, Mat. Pre-approved Part # Hubbell P/N - 110FPP1PR	each				
5109	Modular Plug, 110 Style, 4-pair, Solid/Stranded, CAT-5E, Labor	each				
5110	Modular Plug, 6-110 Style 1-pair, Solid/Stranded, CAT-5E, Mat. Pre-approved Part # Hubbell P/N - 110FPP1PR	each				
5111	Modular Plug, 6-110 Style, 1-pair, Solid/Stranded, CAT-5E, Lab.	each				
5112	Modular Plug, 6-110 Style 4-pair, Solid/Stranded, CAT-5E, Mat. Pre-approved Part # Hubbell P/N - 110FPP1PR	each				
5113	Modular Plug, 6-110 Style, 4-pair, Solid/Stranded, CAT-5E, Labor	each				

5114	Protector, LAN CAT-5E, 8 PIN, Material Pre-approved Part # ITW Linx P/N - CAT5-LAN	each				
5115	Protector, LAN, M to F, Labor	each				
	SUPPORT SYSTEM HARWARE UNITS					
6001	Relay Rack, Free Standing 19" w x 84" h, Material Pre-approved Part # Hubbell P/N - HPW84RR19	each				
6002	Relay Rack, Free Standing 19" w x 84" h, Labor	each				
6003	Relay Rack, Wall Mount 19" w x 36" h x 15" d, Hinged, Mat. Pre-approved Part # Hubbell P/N - HPWWMR36	each				
6004	Relay Rack, Wall Mount 19" w x 36" h x 15" d, Hinged, Labor	each				
6005	Patch Panel, Hinged Wall Mount Bracket, 3.5" wide, Material Pre-approved Part # Hubbell P/N - BRMCCMB19X35X8	each				
6006	Patch Panel, Hinged Wall Mount Bracket, 7" wide, Material. Pre-approved Part # Hubbell P/N - BRMCCMB19X7X8	each				
6007	Patch Panel, Hinged Wall Mount Bracket, Labor	each				
6008	Shelf, 19" Rack Mount, Material Pre-approved Part # Hubbell P/N - MCCCS19P	each				
6009	Shelf, 19" Rack Mount, Labor	each				
6010	Shelf, Heavy Duty, 19" Rack Mount, Material Pre-approved Part # Hubbell P/N - MCCCWS19HD	each				
6011	Shelf, Heavy Duty, 19" Rack Mount, Labor	each				

6012	Frame & (4) 89B's, 19" Rack Mount, Material Pre-approved Part # Siemon P/N - CC-2014-TB-DC	each				
6013	Frame & (4) 89B's, 19" Rack Mount, Labor	each				
6014	Frame & (8) 89B's, 19" Rack Mount, Material Pre-approved Part # Siemon P/N - CC-2024-TB-DC	each				
6015	Frame & (8) 89B's, 19" Rack Mount, Labor	each				
6016	Rack Mount Kit 19", Building Entrance Protector, Material Pre-approved Part # Chatsworth P/N - 11448-701	each				
6017	Rack Mount Kit 19", Building Entrance Protector, Labor	each				
6018	Power Surge Strip, Horizontal, Rack Mount, Material Pre-approved Part # Tripplite - IBAR-12	each				
6019	Power Surge Strip, Horizontal, Rack Mount, Labor	each				
6020	Power Surge Strip, Vertical, Rack Mount, Material Pre-approved Part # Homaco - PS-48-15A-10P	each				
6021	Power Surge Strip, Vertical, Rack Mount, Labor	each				
6022	Cabinet, Floor Type, 84" high, Material Pre-approved Part # Hubbell P/N - HPW78CC19X30x	each				
6023	Cabinet, Floor Type, 84" high, Labor	each				
6024	Cabinet, Floor Type, 48" high, Material Pre-approved Part # Hubbell P/N - HPW48CC19X30x	each				
6025	Cabinet, Floor Type, 48" high, Labor	each				

6026	Cabinet Fan Unit, Floor Type, Material Pre-approved Part # Hubbell P/N - HPWRFANxLN	each				
6027	Cabinet Fan Unit, Floor Type, Labor	each				
6028	Cabinet Shelf, Floor Type, Material Pre-approved Part # Hubbell P/N - MCCPSHLF	each				
6029	Cabinet Shelf, Floor Type, Labor	each				
6030	Cabinet, Wall Type, 24" high, Material Pre-approved Part # Hubbell P/N - HW2426x	each				
6031	Cabinet, Wall Type, 24" high, Labor	each				
6032	Cabinet, Wall Type, 48" high, Material Pre-approved Part # Hubbell P/N - HW4826x	each				
6033	Cabinet, Wall Type, 48" high, Labor	each				
6034	Cabinet Fan Unit - Wall Type, Material Pre-approved Part # Hubbell P/N - HWKF120	each				
6035	Cabinet Fan Unit - Wall Type, Labor	each				
6036	Cabinet, Compact Wall Type, 32" high, Material Pre-approved Part # Hubble P/N – RE4, (2) REKF, & REKL	each				
6037	Cabinet, Compact Wall Type, 32" high, Labor	each				
6038	Wire Management Panel, Horizontal, 2-RU, Front Only, Mat. Pre-approved Part # Panduit P/N - WMPHF2	each				
6039	Wire Management Panel, Horiz., 2-RU, Front Rungs Only, Mat. Pre-approved Part # Ortronics P/N - OR-60400057	each				

6040	Wire Management Panel, Horizontal, 2-RU, Front/Rear, Mat. Pre-approved Part # Panduit P/N - WMPH2	each				
6041	Wire Management Panel, Horizontal, Support Bar, Material Pre-approved Part # Chatsworth P/N - 12176-701	each				
6042	Wire Management Panel, Horizontal, Labor	each				
6043	Wire Management Panel, Vertical, Front Only, Material Pre-approved Part # Panduit P/N - WMPVF45	each				
6044	Wire Management Panel, Vertical, Front/Rear, Material Pre-approved Part # Panduit P/N - WMPV45	each				
6045	Wire Management Panel, Vertical, Labor	each				
6046	Wire Management, Vertical Support Bracket, Material Pre-approved Part # B-Line P/N - SB580-06H	each				
6047	Wire Management, Vertical Support Bracket, Labor	each				
6048	Wire Management Panel, Fiber, Upper Tray, Material Pre-approved Part # Chatsworth P/N - 12183-719	each				
6049	Wire Management Panel, Fiber, Lower Tray, Material Pre-approved Part # Chatsworth P/N - 12185-719	each				
6050	Wire Management Panel, Fiber, Lower Double Tray, Material Pre-approved Part # Chatsworth P/N - 12187-719	each				
6051	Wire Management Panel, Fiber, Transition Plate, Material Pre-approved Part # Chatsworth P/N - 12186-719	each				
6052	Wire Management Panel, Fiber, Central Rounting Pnl, Material Pre-approved Part # Ortronics P/N - OR-808045124-00	each				

6053	Wire Management Panel, Fiber, Labor	each				
6054	Cable Tray , 6" Wide, 5' Long, 6" Height, Material Pre-approved Part # Chatsworth P/N - 10250-x06 + 10596-106	5-ft				
6055	Cable Tray , 6" Wide, 5' Long, 6" Height, Labor	5-ft				
6056	Cable Tray , 6" Wide, 10' Long, 6" Height, Material Pre-approved Part # Chatsworth P/N - 10250-x06 + 10596-106	10-ft				
6057	Cable Tray , 6" Wide, 10' Long, 6" Height, Labor	10-ft				
6058	Cable Tray , 12" Wide, 5' Long, 6" Height, Material Pre-approved Part # Chatsworth P/N - 10250-x12 + 10596-106	5-ft				
6059	Cable Tray , 12" Wide, 5' Long, 6" Height, Labor	5-ft				
6060	Cable Tray , 12" Wide, 10' Long, 6" Height, Material Pre-approved Part # Chatsworth P/N - 10250-x12 + 10596-106	10-ft				
6061	Cable Tray , 12" Wide, 10' Long, 6" Height, Labor	10-ft				
6062	Cable Tray, Splice Kit, Material Pre-approved Part # Chatsworth P/N - 11301-001	each				
6063	Cable Tray, Splice Kit, Labor	each				
6064	Cable Tray, Junction Kit, Material Pre-approved Part # Chatsworth P/N - 11302-001	each				
6065	Cable Tray, Junction Kit, Labor	each				
6066	Cable Tray, Mounting-Bolt Kit, Material Pre-approved Part # Chatsworth P/N - 11308-001	each				

6067	Cable Tray, Mounting-Bolt Kit, Labor	each				
6068	Cable Tray, Ceiling Kit, Material Pre-approved Part # Chatsworth P/N - 11310-001	each				
6069	Cable Tray, Ceiling Kit, Labor	each				
6070	Cable Tray, Wall Bracket Kit, Material Pre-approved Part # Chatsworth P/N - 11421-x12	each				
6071	Cable Tray, Wall Bracket Kit, Labor	each				
6072	Cable Tray, Triangular Support Bracket Kit, Material Pre-approved Part # Chatsworth P/N - 11746-x12	each				
6073	Cable Tray, Triangular Support Bracket Kit, Labor	each				
6074	Strut, 1-5/8” x 1-5/8” Galvanized Steel, Slotted, Material Pre-approved Part # Unistrut P/N - P1000HS10PG	foot				
6075	Strut, 1-5/8” x 1-5/8” Galvanized Steel, Slotted, Labor	foot				
6076	Cable Tray, Flexible 4 ¼” Wide, 8’ Long, Material Pre-approved Part # Snake Tray P/N – CM 201-425-8	10-ft				
6077	Cable Tray, Flexible 4 ¼” Wide, 8’ Long, Labor	10-ft				
6078	Cable Tray, Wire Mesh Basket, 2"x 6"x 10', Material Pre-approved Part # G.S. Metals P/N – FT2X6X10	10-ft				
6079	Cable Tray, Wire Mesh Basket, 2"x 6"x 10', Labor	10-ft				
6080	Cable Tray, Wire Mesh Basket, 2"x 12"x 10', Material Pre-approved Part # G.S. Metals P/N – FT2X12X10	10-ft				

6081	Cable Tray, Wire Mesh Basket, 2"x 12"x 10', Labor	10-ft				
6082	Cable Tray, Wire Mesh Basket, 4"x 12"x 10', Material Pre-approved Part # G.S. Metals P/N – FT4X12X10	10-ft				
6083	Cable Tray, Wire Mesh Basket, 4"x 12"x 10', Labor	10-ft				
6084	Cable Tray, Wire Mesh Basket, 4"x 18"x 10', Material Pre-approved Part # G.S. Metals P/N – FT4X18X10	10-ft				
6085	Cable Tray, Wire Mesh Basket, 4"x 18"x 10', Labor	10-ft				
6086	Cable Tray, Wire Mesh Basket, 4"x 24"x 10', Material Pre-approved Part # G.S. Metals P/N – FT4X24X10	10-ft				
6087	Cable Tray, Wire Mesh Basket, 4"x 24"x 10', Labor	10-ft				
	MISCELLANEOUS LABOR AND SERVICE UNITS					
7001	Laborer	hr				
7002	Splicer	hr				
7003	Conduit Worker	hr				
7004	Inside Cable Placer	hr				
7005	Wire Technician	hr				
7006	Fiber Technician	hr				
7007	Abandoned Cable Removal	hr				
7008	Engineer	hr				
7009	Drafting	hr				

7010	Clerical	hr				
7011	Trouble Determination Fee, Normal Business Hours	hr				
7012	Trouble Determination Fee, Normal Business Hours Each Additional Hour	hr				
	MISCELLANEOUS UNITS					
8001	Special Project Surcharge, Material (Not to exceed 50%)	%				
8002	Special Project Surcharge, After Hours Labor (Not to exceed 50%)	%				

7.2 OTHER RESPONSE FORMS
7.2.1 REFERENCES

1. **Indoor Wire UTP**

Company Name (Customer) _____
Company Address _____
Contact Person _____ Phone Number _____
E-Mail _____
Cable Job Description _____
_____
Date of Completion _____

2. **Fiber Optic**

Company Name (Customer)
Company Address _____
Contact Person _____ Phone Number _____
E-Mail _____
Cable Job Description _____
_____
Date of Completion _____

3. **Coaxial Cable**

Company Name (Customer)
Company Address _____
Contact Person _____ Phone Number _____
E-Mail _____
Cable Job Description _____
_____
Date of Completion _____

4. **Indoor Conduit**

Company Name (Customer)
Company Address _____
Contact Person _____ Phone Number _____
E-Mail _____
Cable Job Description _____
_____
Date of Completion _____

7.2.2 EXPERIENCE AND TRAINING

The bidder has been in the indoor communications cabling field since _____.
Year

Bidder should provide a narrative about the employees' current training and experience as well as any on-going training the company offers to its employees.

7.2.3 BIDDER QUALIFICATIONS

Bidders are encouraged to write a narrative that supplies relevant information concerning their qualifications to perform work under this contract and any value-added services and features offered.

7.2.4 WARRANTIES

Describe any extended warranty (over and above the one year mandatory warranty), manufacturer or other, offered at no additional cost to the State. Identify the types of indoor plant covered by any extended warranty: i.e., indoor UTP, fiber, coaxial, conduit. Specify any manufacturer-extended warranty program on active components, and identify the active components covered. Specify if any extended warranty is a single manufacturer solution or a partnered manufacturer solution.

7.2.5 INSTALLATION INTERVALS

Bidder should provide a narrative describing his solution to the State's desire for the shortest installation intervals for each region being bid.

7.2.6 QUALITY CONTROL

Bidder should provide a narrative describing his existing quality control system and procedures for each region being bid.

7.2.7 VARYING WORKLOAD CAPABILITY

Bidder should provide a narrative of his company’s ability to handle varying work loads per region bid.

8.0 OTHER APPENDICES

8.1 HISTORICAL DATA

INDOOR COMPLEX WIRE AND CABLE CONTRACT UNITS

LINE	ITEM DECSRIPTION	UNIT	REGION 1	REGION 2	REGION 3	REGION 4
1001	Cable Tag, Innerduct, Material	each	0	2	0	0
1002	Cable Tag, Innerduct, Labor	each	0	2	0	0
1003	Conduit, Electric Metallic Tubing , 3/4" Dia., 10' Long, Material	10 ft	1	40	8	22
1004	Conduit, Electric Metallic Tubing , 3/4" Dia., 10' Long, Labor	10 ft	1	40	8	22
1005	Conduit, Electric Metallic Tubing , 1" Dia., 10' Long, Material	10 ft	0	16	7	0
1006	Conduit, Electric Metallic Tubing , 1" Dia., 10' Long, Labor	10 ft	0	16	7	0
1007	Conduit, Electric Metallic Tubing , 1-1/2" Dia., 10' Long, Mat.	10 ft	3	2	0	10
1008	Conduit, Electric Metallic Tubing , 1-1/2" Dia., 10' Long, Labor	10 ft	3	2	0	10
1009	Conduit, Electric Metallic Tubing , 2" Dia., 10' Long, Material	10 ft	11	0	0	3
1010	Conduit, Electric Metallic Tubing , 2" Dia., 10' Long, Labor	10 ft	11	0	0	0
1011	Conduit, Electric Metallic Tubing , 4" Dia., 10' Long, Material	10 ft	0	0	0	10
1012	Conduit, Electric Metallic Tubing , 4" Dia., 10' Long, Labor	10 ft	0	0	0	7
1013	Conduit 90°-Elbow, EMT, 2" Dia. Normal Radius, Material	each	2	2	0	0
1014	Conduit 90°-Elbow, EMT, 2" Dia. Normal Radius, Labor	each	2	2	0	0
1015	Conduit 90°-Elbow, EMT, 4" Dia. Normal Radius, Material	each	0	0	0	1
1016	Conduit 90°-Elbow, EMT, 4" Dia. Normal Radius, Labor	each	0	0	0	1
1017	Conduit 45°-Elbow, EMT, 2" Dia. Normal Radius, Material	each	0	0	0	0

1018	Conduit 45°-Elbow, EMT, 2" Dia. Normal Radius, Labor	each	0	0	0	0
1019	Conduit 45°-Elbow, EMT, 4" Dia. Normal Radius, Material	each	0	0	0	0
1020	Conduit 45°-Elbow, EMT, 4" Dia. Normal Radius, Labor	each	0	0	0	0
1021	Conduit, Rigid Galv. Steel, 3/4" Dia., 10' Long, Material	10 ft	New	New	New	New
1022	Conduit, Rigid Galv. Steel, 3/4" Dia., 10' Long, Labor	10 ft	New	New	New	New
1023	Conduit, Rigid Galv. Steel, 1" Dia., 10' Long, Material	10 ft	New	New	New	New
1024	Conduit, Rigid Galv. Steel, 1" Dia., 10' Long, Labor	10 ft	New	New	New	New
1025	Conduit, Rigid Galv. Steel, 1-1/2" Dia., 10' Long, Material	10 ft	New	New	New	New
1026	Conduit, Rigid Galv. Steel, 1-1/2" Dia., 10' Long, Labor	10 ft	New	New	New	New
1027	Conduit, Rigid Galv. Steel, 2" Dia., 10' Long, Material	10 ft	New	New	New	New
1028	Conduit, Rigid Galv. Steel, 2" Dia., 10' Long, Labor	10 ft	New	New	New	New
1029	Conduit, Rigid Galv. Steel , 4" Dia., 10' Long, Material	10 ft	New	New	New	New
1030	Conduit, Rigid Galv. Steel , 4" Dia., 10' Long Labor	10 ft	New	New	New	New
1031	Conduit 90°-Elbow, RGS, 2" Dia. Normal Radius, Material	each	New	New	New	New
1032	Conduit 90°-Elbow, RGS, 2" Dia. Normal Radius, Labor	each	New	New	New	New
1033	Conduit 90°-Elbow, RGS, 4" Dia. Normal Radius, Material	each	New	New	New	New
1034	Conduit 90°-Elbow, RGS, 4" Dia. Normal Radius, Labor	each	New	New	New	New
1035	Conduit 45°-Elbow, RGS, 2" Dia. Normal Radius, Material	each	New	New	New	New
1036	Conduit 45°-Elbow, RGS, 2" Dia. Normal Radius, Labor	each	New	New	New	New
1037	Conduit 45°-Elbow, RGS, 4" Dia. Normal Radius, Material	each	New	New	New	New
1038	Conduit 45°-Elbow, RGS, 4" Dia. Normal Radius, Labor	each	New	New	New	New
1039	Flexible Metal Conduit, 3/4" Dia., 5' Long, Material	5 ft	0	0	0	0
1040	Flexible Metal Conduit, 3/4" Dia., 5' Long, Labor	5 ft	0	0	0	0

1041	Flexible Metal Conduit, 1" Dia., 5' Long, Material	5 ft	1	0	0	0
1042	Flexible Metal Conduit, 1" Dia., 5' Long, Labor	5 ft	1	0	0	0
1043	Flexible Metal Conduit, 1-1/2" Dia., 5' Long, Material	5 ft	0	27	0	0
1044	Flexible Metal Conduit, 1-1/2" Dia., 5' Long, Labor	5 ft	0	27	0	0
1045	Flexible Metal Conduit, 2" Dia., 5' Long, Material	5 ft	0	1	0	0
1046	Flexible Metal Conduit, 2" Dia., 5' Long, Labor	5 ft	0	1	0	0
1047	Flexible Metal Conduit, 4" Dia., 5' Long, Material	5 ft	0	22	0	3
1048	Flexible Metal Conduit, 4" Dia., 5' Long, Labor	5 ft	0	22	0	3
1049	Flexible Liquidtight Metal Conduit, 3/4" Dia., 5' Long, Material	5 ft	New	New	New	New
1050	Flexible Liquidtight Metal Conduit, 3/4" Dia., 5' Long, Labor	5 ft	New	New	New	New
1051	Flexible Liquidtight Metal Conduit, 1" Dia., 5' Long, Material	5 ft	New	New	New	New
1052	Flexible Liquidtight Metal Conduit, 1" Dia., 5' Long, Labor	5 ft	New	New	New	New
1053	Flexible Liquidtight Metal Conduit, 1-1/2" Dia., 5' Long, Material	5 ft	New	New	New	New
1054	Flexible Liquidtight Metal Conduit, 1-1/2" Dia., 5' Long, Labor	5 ft	New	New	New	New
1055	Flexible Liquidtight Metal Conduit, 2" Dia., 5' Long, Material	5 ft	New	New	New	New
1056	Flexible Liquidtight Metal Conduit, 2" Dia., 5' Long, Labor	5 ft	New	New	New	New
1057	Flexible Liquidtight Metal Conduit, 4" Dia., 5' Long, Material	5 ft	New	New	New	New
1058	Flexible Liquidtight Metal Conduit, 4" Dia., 5' Long, Labor	5 ft	New	New	New	New
1059	Flexible Liquidtight Non-Metallic Cond., 3/4" Dia., 5' Long, Mat.	5 ft	New	New	New	New
1060	Flexible Liquidtight Non-Metallic Cond., 3/4" Dia., 5' Long, Labor	5 ft	New	New	New	New
1061	Flexible Liquidtight Non-Metallic Cond., 1" Dia., 5' Long, Mat.	5 ft	New	New	New	New
1062	Flexible Liquidtight Non-Metallic Cond., 1" Dia., 5' Long, Labor	5 ft	New	New	New	New
1063	Flexible Liquidtight Non-Metallic Cond., 1-1/2" Dia., 5' Long, Mat.	5 ft	New	New	New	New

1064	Flexible Liquidtight Non-Metallic Cond., 1-1/2" Dia., 5' Long, Lab.	5 ft	New	New	New	New
1065	Flexible Liquidtight Non-Metallic Cond., 2" Dia., 5' Long, Mat.	5 ft	New	New	New	New
1066	Flexible Liquidtight Non-Metallic Cond., 2" Dia., 5' Long, Labor	5 ft	New	New	New	New
1067	InnerDuct, PVC 3/4" Dia., Material	ft	New	New	New	New
1068	InnerDuct, Plenum 3/4" Dia., Material	ft	New	New	New	New
1069	Inner Duct, Riser 3/4" Dia., Material	ft	New	New	New	New
1070	Inner Duct, All Types 3/4" Dia., Labor Single	ft	New	New	New	New
1071	Inner Duct, All Types 3/4" Dia., Labor Multiple	ft	New	New	New	New
1072	Inner Duct, PVC 1" Dia., Material	ft	0	5	0	550
1073	Inner Duct, Plenum 1" Dia., Material	ft	0	1385	1231	250
1074	Inner Duct, Riser 1" Dia., Material	ft	0	3825	275	0
1075	Inner Duct, All Types 1" Dia., Labor Single	ft	0	5215	456	550
1076	Inner Duct, All Types 1" Dia., Labor Multiple	ft	0	0	50	250
1077	Inner Duct, PVC 1-1/4" Dia., Material	ft	595	0	0	0
1078	Inner Duct, Plenum 1-1/4" Dia., Material	ft	0	925	790	0
1079	Inner Duct, Riser 1-1/4" Dia., Material	ft	0	345	475	0
1080	Inner Duct, All Types 1-1/4" Dia., Labor Single	ft	595	520	1025	0
1081	Inner Duct, All Types 1-1/4" Dia., Labor Multiple	ft	0	650	240	0
1082	Inner Duct, 1" Coupling, Material	each	New	New	New	New
1083	Inner Duct, 1-1/4" Coupling, Material	each	New	New	New	New
1084	Innerduct, Coupling All Sizes, Labor	each	New	New	New	New
1085	Pull Line, Rope, Material	ft	New	New	New	New
1086	Pull Line, Rope, Labor	ft	New	New	New	New

1087	Pull Line, String, Material	ft	100	225	180	250
1088	Pull Line, String, Labor	ft	100	225	180	250
1089	Enclosure, Metallic, NEMA 1, 6"X6"X4", Material	each	0	7	6	12
1090	Enclosure, Metallic, NEMA 1, 6"X6"X4", Labor	each	0	7	6	6
1091	Enclosure, Metallic, NEMA 1, 8"X8"X6", Material	each	2	8	1	1
1092	Enclosure, Metallic, NEMA 1, 8"X8"X6", Labor	each	2	8	1	1
1093	Enclosure, Metallic, NEMA 1,12"X12"X6", Material	each	New	New	New	New
1094	Enclosure, Metallic, NEMA 1,12"X12"X6", Labor	each	New	New	New	New
1095	Enclosure, Metallic, NEMA 1,12"X12"X8", Material	each	New	New	New	New
1096	Enclosure, Metallic, NEMA 1,12"X12"X8", Labor	each	New	New	New	New
1097	Enclosure, Metallic, NEMA 1, 18"X18"X8", Material	each	New	New	New	New
1098	Enclosure, Metallic, NEMA 1, 18"X18"X8", Labor	each	New	New	New	New
1099	Enclosure, Metallic, NEMA 1, 24"X24"X10", Material	each	New	New	New	New
1100	Enclosure, Metallic, NEMA 1, 24"X24"X10", Labor	each	New	New	New	New
1101	Enclosure, Metallic, NEMA 1, 36"X36"X12", Material	each	New	New	New	New
1102	Enclosure, Metallic, NEMA 1, 36"X36"X12", Labor	each	New	New	New	New
1103	Enclosure, Metallic NEMA 12, 6"X6"X4", Material.	each	New	New	New	New
1104	Enclosure, Metallic NEMA 12, 6"X6"X4", Labor	each	New	New	New	New
1105	Enclosure, Metallic NEMA 12, 8"X8"X6", Material.	each	New	New	New	New
1106	Enclosure, Metallic NEMA 12, 8"X8"X6", Labor	each	New	New	New	New
1107	Enclosure, Metallic NEMA 12, 12"X12"X6", Material	each	New	New	New	New
1108	Enclosure, Metallic NEMA 12, 12"X12"X6", Labor	each	New	New	New	New
1109	Enclosure, Metallic NEMA 12, 12"X12"X8", Material	each	New	New	New	New

1110	Enclosure, Metallic NEMA 12, 12"X12"X8", Labor	each	New	New	New	New
1111	Enclosure, Metallic NEMA 12, 18"X18"X8", Material	each	New	New	New	New
1112	Enclosure, Metallic NEMA 12, 18"X18"X8", Labor	each	New	New	New	New
1113	Enclosure, Metallic NEMA 12, 24"X24"X10", Material	each	New	New	New	New
1114	Enclosure, Metallic NEMA 12, 24"X24"X10", Labor	each	New	New	New	New
1115	Enclosure, Metallic NEMA 12, 36"X36"X12", Material	each	New	New	New	New
1116	Enclosure, Metallic NEMA 12, 36"X36"X12", Labor	each	New	New	New	New
1117	Enclosure, Metallic NEMA 12, 8"X8"X24" Trough, Material	each	New	New	New	New
1118	Enclosure, Metallic NEMA 12, 8"X8"X24" Trough, Labor	each	New	New	New	New
1119	Enclosure, Metallic NEMA 12, 8"X8"X36" Trough, Material	each	New	New	New	New
1120	Enclosure, Metallic NEMA 12, 8"X8"X36" Trough, Labor	each	New	New	New	New
1121	Core, Sleeve, & Fire Stop, Masonry, 1" I.D., Per 1" Depth, Mat.	inch	74	121	6	240
1122	Core, Sleeve & Fire Stop, Masonry, 1" I.D., Per 1" Depth, Labor	inch	74	121	70	264
1123	Core, Sleeve, & Fire Stop, Masonry, 2" I.D., Per 1" Depth, Mat.	inch	73	118	180	207
1124	Core, Sleeve & Fire Stop, Masonry, 2" I.D., Per 1" Depth, Labor.	inch	66	118	192	171
1125	Core, Sleeve, & Fire Stop, Masonry, 4" I.D., Per 1" Depth, Mat.	inch	0	56	66	136
1126	Core, Sleeve & Fire Stop, Masonry, 4" I.D., Per 1" Depth, Labor	inch	0	56	65	128
1127	Core, Sleeve, & Fire Stop, Drywall, 1" I.D., Per 1" Depth, Mat.	inch	20	87	313	44
1128	Core, Sleeve & Fire Stop, Drywall, 1" I.D., Per 1" Depth, Labor	inch	20	87	284.5	44
1129	Core, Sleeve, & Fire Stop, Drywall, 2" I.D., Per 1" Depth, Mat.	inch	0	88	198	56
1130	Core, Sleeve & Fire Stop, Drywall, 2" I.D., Per 1" Depth, Labor	inch	6	118	118	56
1131	Core, Sleeve, & Fire Stop, Drywall, 4" I.D., Per 1" Depth, Mat.	inch	0	237	82	0
1132	Core, Sleeve & Fire Stop, Drywall, 4" I.D., Per 1" Depth, Labor	inch	0	116	80	0

1133	Core, Sleeve, & Fire Stop, Concrete, 1" I.D., Per 1" Depth, Mat.	inch	0	0	2334	12
1134	Core, Sleeve & Fire Stop, Concrete, 1" I.D., Per 1" Depth, Labor	inch	0	0	3498	10
1135	Core, Sleeve, & Fire Stop, Concrete, 2" I.D., Per 1" Depth, Mat.	inch	0	24	74	27
1136	Core, Sleeve & Fire Stop, Concrete, 2" I.D., Per 1" Depth, Labor	inch	0	24	34	27
1137	Core, Sleeve, & Fire Stop, Concrete, 4" I.D., Per 1" Depth, Mat.	inch	0	50	128	60
1138	Core, Sleeve & Fire Stop, Concrete, 4" I.D., Per 1" Depth, Labor	inch	0	50	124	60
1139	Core, Sleeve, & Non-Fire, Masonry, 1" I.D., Per 1" Depth, Mat.	inch	6	175	0	24
1140	Core, Sleeve & Non-Fire, Masonry, 1" I.D., Per 1" Depth, Labor	inch	6	175	0	24
1141	Core, Sleeve, & Non-Fire, Masonry, 2" I.D., Per 1" Depth, Mat.	inch	8	7	0	24
1142	Core, Sleeve & Non-Fire, Masonry, 2" I.D., Per 1" Depth, Labor	inch	8	7	0	24
1143	Core, Sleeve, & Non-Fire, Masonry, 4" I.D., Per 1" Depth, Mat.	inch	0	0	0	4
1144	Core, Sleeve & Non-Fire, Masonry, 4" I.D., Per 1" Depth, Labor	inch	1	0	0	5
1145	Core, Sleeve, & Non-Fire, Drywall, 1" I.D., Per 1" Depth, Mat.	inch	51	64	51	26
1146	Core, Sleeve & Non-Fire, Drywall, 1" I.D., Per 1" Depth, Labor	inch	52	64	95	39
1147	Core, Sleeve, & Non-Fire, Drywall, 2" I.D., Per 1" Depth, Mat.	inch	1	20	0	7
1148	Core, Sleeve & Non-Fire, Drywall, 2" I.D., Per 1" Depth, Labor	inch	1	12	0	7
1149	Core, Sleeve, & Non-Fire, Drywall, 4" I.D., Per 1" Depth, Mat.	inch	24	0	36	0
1150	Core, Sleeve & Non-Fire, Drywall, 4" I.D., Per 1" Depth, Labor	inch	8	0	36	0
1151	Core, Sleeve, & Non-Fire, Concrete, 1" I.D., Per 1" Depth, Mat.	inch	0	0	0	6
1152	Core, Sleeve & Non-Fire, Concrete, 1" I.D., Per 1" Depth, Labor	inch	0	0	0	6
1153	Core, Sleeve, & Non-Fire, Concrete, 2" I.D., Per 1" Depth, Mat.	inch	0	0	0	0
1154	Core, Sleeve & Non-Fire, Concrete, 2" I.D., Per 1" Depth, Labor	inch	0	0	0	0
1155	Core, Sleeve, & Non-Fire, Concrete, 4" I.D., Per 1" Depth, Mat.	inch	0	12	0	0

1156	Core, Sleeve & Non-Fire, Concrete, 4" I.D., Per 1" Depth, Labor	inch	0	12	0	1
1157	Drilled Hole, 5/8", Non-Sleeved & Fire Stop, Masonry, Materials	inch	New	New	New	New
1158	Drilled Hole, 5/8", Non-Sleeved & Fire Stop, Masonry, Labor	inch	New	New	New	New
1159	Drilled Hole, 5/8", Non-Sleeved & Fire Stop, Drywall, Materials	inch	New	New	New	New
1160	Drilled Hole, 5/8", Non-Sleeved & Fire Stop, Drywall, Labor	inch	New	New	New	New
1161	Drilled Hole, 5/8", Non-Sleeved & Fire Stop, Concrete, Materials	inch	New	New	New	New
1162	Drilled Hole, 5/8", Non-Sleeved & Fire Stop, Concrete, Labor	inch	New	New	New	New
1163	Drilled Hole, 5/8", Non-Sleeved & Non-Fire, Masonry, Materials	inch	New	New	New	New
1164	Drilled Hole, 5/8", Non-Sleeved & Non-Fire, Masonry, Labor	inch	New	New	New	New
1165	Drilled Hole, 5/8", Non-Sleeved & Non-Fire, Drywall, Materials	inch	New	New	New	New
1166	Drilled Hole, 5/8", Non-Sleeved & Non-Fire, Drywall, Labor	inch	New	New	New	New
1167	Drilled Hole, 5/8", Non-Sleeved & Non-Fire, Concrete, Materials	inch	New	New	New	New
1168	Drilled Hole, 5/8", Non-Sleeved & Non-Fire, Concrete, Labor	inch	New	New	New	New
1169	Drop Pole , 2-1/4" Square, 10'-2" Height, Material	each	1	41	9	4
1170	Drop Pole , 2-1/4" Square, 10'-2" Height, Labor	each	1	41	9	4
1171	Drop Pole , 2-1/4" Square, 12'-2" Height, Material	each	New	New	New	New
1172	Drop Pole , 2-1/4" Square, 12'-2" Height, Labor	each	New	New	New	New
1173	Drop Pole , 2-1/4" Square, 15'-2" Height, Material	each	0	0	0	7
1174	Drop Pole , 2-1/4" Square, 15'-2" Height, Labor	each	0	0	0	7
1175	Floor Cable Duct, 1/2" ID Wide, 5' Long, Material	5 ft	0	0	0	10
1176	Floor Cable Duct, 1/2" ID Wide, 5' Long, Labor	5 ft	0	0	0	10
1177	Floor Cable Duct, 1" ID Wide, 5' Long, Material	5 ft	0	0	0	36
1178	Floor Cable Duct, 1" ID Wide, 5' Long, Labor	5 ft	0	0	0	36

1179	Surface Raceway Wall, 3/4" Wide, 5 Ft. Length, Material	5 ft	586	588	2175	1249
1180	Surface Raceway Wall, 3/4" Wide, 5 Ft. Length, Labor	5 ft	580	598	2147	1249
1181	Surface Raceway Wall, 1.5" Wide, 5 Ft. Length, Material	5 ft	11	64	12	133
1182	Surface Raceway Wall, 1.5" Wide, 5 Ft. Length, Labor	5 ft	11	64	12	133
1183	Surface Raceway Wall, 2" Wide, 5 Ft. Length, Material	5 ft	New	New	New	New
1184	Surface Raceway Wall, 2" Wide, 5 Ft. Length, Labor	5 ft	New	New	New	New
1185	Surface Raceway Wall, 4" Wide, 5 Ft. Length, Material	5 ft	3	17	33	10
1186	Surface Raceway Wall, 4" Wide, 5 Ft. Length, Labor	5 ft	9	17	33	10
1187	Wire Duct, 2" x 2", Material	ft	0	0	0	0
1188	Wire Duct, 2" x 2", Labor	ft	0	0	0	0
1189	Wire Duct, 4" x 4", Material	ft	0	10	0	0
1190	Wire Duct, 4" x 4", Labor	ft	0	10	0	0
1191	Outlet Bracket, Faceplate Bracket, Single-Gang, Material	each	New	New	New	New
1192	Outlet Bracket, Faceplate Bracket, Single-Gang, Labor	each	New	New	New	New
1193	Outlet Box, Recessed in Wall, Single-Gang, Material	each	244	736	376	407
1194	Outlet Box, Recessed in Wall, Single-Gang, Labor	each	244	736	376	407
1195	Outlet Box, Recessed in Firewall, Single-Gang, Material	each	0	0	0	4
1196	Outlet Box, Recessed in Firewall, Single-Gang, Labor	each	0	0	0	4
1197	Outlet Box, Recessed in Wall, Double-Gang, Material	each	New	New	New	New
1198	Outlet Box, Recessed in Wall, Double-Gang, Labor	each	New	New	New	New
1199	Outlet Box, Recessed in Firewall, Double-Gang, Material	each	New	New	New	New
1200	Outlet Box, Recessed in Firewall, Double-Gang, Labor	each	New	New	New	New
1201	Outlet Box, Surface Mount, Single-Gang, Material	each	346	795	1177	847

1202	Outlet Box, Surface Mount, Single-Gang, Labor	each	345	796	1177	844
1203	Outlet Box, Surface Mount, Double-Gang, Material	each	New	New	New	New
1204	Outlet Box, Surface Mount, Double-Gang, Labor	each	New	New	New	New
1205	Outlet Box, Tombstone on Floors Single-Gang, Material	each	0	0	4	0
1206	Outlet Box, Tombstone on Floor, Single-Gang, Labor	each	0	0	4	0
*	**INDOOR PLANT UNITS**					
2001	Voice Cable, UL-CMR PVC, 6 Pr. 24 GA., Material	ft	0	0	225	0
2002	Voice Cable, UL-CMR PVC, 6 Pr. 24 GA., Labor Single	ft	0	0	225	0
2003	Voice Cable, UL-CMR PVC, 6 Pr. 24 GA., Labor Multiple	ft	0	0	0	0
2004	Voice Cable, UL-CMR PVC, 12 Pr. 24 GA., Material	ft	0	125	0	0
2005	Voice Cable, UL-CMR PVC, 12 Pr. 24 GA., Labor Single	ft	0	125	0	0
2006	Voice Cable, UL-CMR PVC, 12 Pr. 24 GA., Labor Multiple	ft	0	0	0	0
2007	Voice Cable, UL-CMR PVC, 25 Pr. 24 GA., Material	ft	0	1110	0	0
2008	Voice Cable, UL-CMR PVC, 25 Pr. 24 GA., Labor Single	ft	0	1110	0	0
2009	Voice Cable, UL-CMR PVC, 25 Pr. 24 GA., Labor Multiple	ft	0	0	250	0
2010	Voice Cable, UL-CMR PVC, 50 Pr. 24 GA., Material	ft	100	965	0	410
2011	Voice Cable, UL-CMR PVC, 50 Pr. 24 GA., Labor Single	ft	100	725	0	435
2012	Voice Cable, UL-CMR PVC, 50 Pr. 24 GA., Labor Multiple	ft	0	240	0	25
2013	Voice Cable, UL-CMR PVC, 100 Pr. 24 GA., Material	ft	0	1331	0	300
2014	Voice Cable, UL-CMR PVC, 100 Pr. 24 GA., Labor Single	ft	0	610	0	124
2015	Voice Cable, UL-CMR PVC, 100 Pr. 24 GA., Labor Multiple	ft	0	240	0	0
2016	Voice Cable, UL-CMR PVC, 200 Pr. 24 GA., Material	ft	0	0	0	0
2017	Voice Cable, UL-CMR PVC, 200 Pr. 24 GA., Labor Single	ft	0	0	0	0

2018	Voice Cable, UL-CMR PVC, 200 Pr. 24 GA., Labor Multiple	ft	0	0	0	0
2019	Voice Cable, UL-CMR PVC, 300 Pr. 24 GA., Material	ft	0	0	0	0
2020	Voice Cable, UL-CMR PVC, 300 Pr. 24 GA., Labor Single	ft	0	0	0	0
2021	Voice Cable, UL-CMR PVC, 300 Pr. 24 GA., Labor Multiple	ft	0	0	0	0
2022	Voice Cable, Riser, ARMM 25 Pr. 24 GA., Material	ft	0	0	115	0
2023	Voice Cable Riser, ARMM 25 Pr. 24 GA., Labor Single	ft	0	0	115	0
2024	Voice Cable, Riser, ARMM 25 Pr. 24 GA., Labor Multiple	ft	0	0	0	0
2025	Voice Cable, Riser, ARMM 50 Pr. 24 GA., Material	ft	32	815	0	0
2026	Voice Cable, Riser, ARMM 50 Pr. 24 GA., Labor Single	ft	32	865	0	0
2027	Voice Cable, Riser, ARMM 50 Pr. 24 GA., Labor Multiple	ft	0	0	0	0
2028	Voice Cable, Riser, ARMM 100 Pr. 24 GA., Material	ft	335	300	142	0
2029	Voice Cable, Riser, ARMM 100 Pr. 24 GA., Labor Single	ft	335	300	482	0
2030	Voice Cable, Riser, ARMM 100 Pr. 24 GA., Labor Multiple	ft	0	0	340	0
2031	Voice Cable, Riser, ARMM 200 Pr. 24 GA., Material	ft	0	0	30	0
2032	Voice Cable, Riser, ARMM 200 Pr. 24 GA., Labor Single	ft	0	0	30	0
2033	Voice Cable, Riser, ARMM 200 Pr. 24 GA., Labor Multiple	ft	0	0	0	0
2034	Voice Cable, Riser, ARMM 300 Pr. 24 GA., Material	ft	0	0	0	300
2035	Voice Cable, Riser, ARMM 300 Pr. 24 GA., Labor Single	ft	0	0	0	70
2036	Voice Cable, Riser, ARMM 300 Pr. 24 GA., Labor Multiple	ft	0	0	0	0
2037	Voice Cable, Riser, ARMM 400 Pr. 24 GA., Material	ft	0	0	75	0
2038	Voice Cable, Riser, ARMM 400 Pr. 24 GA., Labor Single	ft	0	0	75	0
2039	Voice Cable, Riser, ARMM 400 Pr. 24 GA., Labor Multiple	ft	0	0	0	0
2040	Voice Cable, Riser, ARMM 600 Pr. 24 GA., Material	ft	0	0	0	0

2041	Voice Cable, Riser, ARMM 600 Pr. 24 GA., Labor Single	ft	0	0	0	0
2042	Voice Cable, Riser, ARMM 600 Pr. 24 GA., Labor Multiple	ft	0	0	0	0
2043	Voice Cable, UL-CMP Plenum, 6 Pr. 24 GA., Material	ft	0	0	0	0
2044	Voice Cable, UL-CMP Plenum, 6 Pr. 24 GA., Labor Single	ft	0	0	0	0
2045	Voice Cable, UL-CMP Plenum, 6 Pr. 24 GA., Labor Multiple	ft	0	0	0	0
2046	Voice Cable, UL-CMP Plenum, 12 Pr. 24 GA., Material	ft	0	0	0	0
2047	Voice Cable, UL-CMP Plenum, 12 Pr. 24 GA., Labor Single	ft	0	0	0	0
2048	Voice Cable, UL-CMP Plenum, 12 Pr. 24 GA., Labor Multiple	ft	0	0	0	0
2049	Voice Cable, UL-CMP Plenum, 25 Pr. 24 GA., Material	ft	0	0	0	0
2050	Voice Cable, UL-CMP Plenum, 25 Pr. 24 GA., Labor Single	ft	0	0	0	0
2051	Voice Cable, UL-CMP Plenum, 25 Pr. 24 GA., Labor Multiple	ft	0	0	0	0
2052	Voice Cable, UL-CMP Plenum, 50 Pr. 24 GA., Material	ft	200	1040	0	78
2053	Voice Cable, UL-CMP Plenum, 50 Pr. 24 GA., Labor Single	ft	200	440	0	78
2054	Voice Cable, UL-CMP Plenum, 50 Pr. 24 GA., Labor Multiple	ft	0	600	0	0
2055	Voice Cable, UL-CMP Plenum, 100 Pr. 24 GA., Material	ft	0	326	460	150
2056	Voice Cable, UL-CMP Plenum, 100 Pr. 24 GA., Labor Single	ft	0	326	460	150
2057	Voice Cable, UL-CMP Plenum, 100 Pr. 24 GA., Labor Multiple	ft	0	0	0	0
2058	Voice Cable, UL-CMP Plenum, 200 Pr. 24 GA., Material	ft	0	0	315	0
2059	Voice Cable, UL-CMP Plenum, 200 Pr. 24 GA., Labor Single	ft	0	0	315	0
2060	Voice Cable, UL-CMP Plenum 200 Pr. 24 GA., Labor Multiple	ft	0	0	0	0
2061	Voice Cable, UL-CMP Plenum, 300 Pr. 24 GA., Material	ft	0	0	218	0
2062	Voice Cable, UL-CMP Plenum, 300 Pr. 24 GA., Labor Single	ft	0	0	218	0
2063	Voice Cable, UL-CMP Plenum, 300 Pr. 24 GA., Labor Multiple	ft	0	0	0	0

2064	Splice Case Indoor 100 Pr., Material	each	0	0	0	1
2065	Splice Case Indoor 100 Pr., Labor	each	0	0	0	1
2066	Splice Case Indoor 200 Pr., Material	each	0	0	0	0
2067	Splice Case Indoor 200 Pr., Labor	each	0	0	0	0
2068	Splice Case Indoor 300 Pr., Material	each	0	0	0	0
2069	Splice Case Indoor 300 Pr., Labor	each	0	0	0	0
2070	Splice Case Indoor 400 Pr., Material	each	0	0	0	0
2071	Splice Case Indoor 400 Pr., Labor	each	0	0	0	0
2072	Splice Case Indoor 600 Pr., Material	each	0	0	0	0
2073	Splice Case Indoor 600 Pr., Labor	each	0	0	0	0
2074	Splice Case Indoor 900 Pr., Material	each	0	0	0	0
2075	Splice Case Indoor 900 Pr., Labor	each	0	0	0	0
2076	Splice Case Indoor 1200 Pr., Material	each	0	0	0	0
2077	Splice Case Indoor 1200 Pr., Labor	each	0	0	0	0
2078	Splice 1 Pair, Material	each	0	0	0	0
2079	Splice 1 Pair, Labor	each	0	0	0	225
2080	Splice Modular 25 Pair, Material	each	0	0	0	0
2081	Splice Modular 25 Pair, Labor	each	0	0	0	0
2082	Clear Cap 1 Pair, Material	each	0	0	0	0
2083	Clear Cap 1 Pair, Labor	each	0	0	0	0
2084	Telephone Backboard, 3/4" X4' X 4' , Material	each	4	5	2	14
2085	Telephone Backboard, 3/4" X4' X 4' , Labor	each	4	5	2	15
2086	Telephone Backboard, 3/4” X4' X 8' , Material	each	1	9	0	11

2087	Telephone Backboard, 3/4" X4' X 8' , Labor	each	1	9	0	10
2088	Metal Backboard, 183A1 Blue 66, Material	each	0	0	6	3
2089	Metal Backboard, 183A2 Green 66, Material	each	0	0	0	0
2090	Metal Backboard, 183A4 Purple 66, Material	each	0	0	0	0
2091	Metal Backboard, 183A5 Yellow 66, Material	each	0	0	0	0
2092	Metal Backboard, 183A7 White 66, Material	each	0	0	0	0
2093	Metal Backboard, 183A8 Gray 66, Material	each	0	0	0	0
2094	Metal Backboard, 183A3 Red 66, Material	each	0	0	0	0
2095	Metal Backboard, 183B1 Blue 66, Material	each	1	0	42	2
2096	Metal Backboard, 183B2 Green 66, Material	each	0	0	0	0
2097	Metal Backboard, 183B3 Red 66, Material	each	0	0	0	0
2098	Metal Backboard, 183B4 Purple 66, Material	each	0	0	0	0
2099	Metal Backboard, 183B5 Yellow 66, Material	each	0	0	0	0
2100	Metal Backboard, 183B8 Gray 66, Material	each	0	0	0	0
2101	Metal Backboard, 183B7 White 66, Material	each	0	0	0	0
2102	Metal Backboard, 187A1 White Spools, Material	each	0	0	5	2
2103	Metal Backboard, 187B1 White Spools, Material	each	1	0	40	13
2104	Metal Backboard, 188 Style, Manager, with Legs, Material	each	0	10	0	0
2105	Metal Backboard, 188 Style, 300pr., Material	each	0	26	0	0
2106	Metal Backboard, 188 Style, 900pr., Material	each	0	2	0	0
2107	Metal Backboard, 110 Jumper Trough Plastic, Material	each	0	174	0	3
2108	Metal Backboard, Half or Full, Labor	each	2	220	106	11
2109	Ground Wire, AWG #6 Green, Per Foot, Material	ft	90	476	359	795

2110	Ground Wire, AWG #6 Green, Per Foot, Labor	ft	90	476	344	795
2111	Ground Bar Kit 2", Material	each	0	0	3	10
2112	Ground Bar Kit 4", Material	each	0	0	3	2
2113	Ground Bar Kit, Labor	each	0	0	0	12
2114	Ground Rod, 1/2" Dia. 8' Long, Material	each	0	2	0	0
2115	Ground Rod, 1/2" Dia. 8' Long, Labor	each	0	2	0	0
2116	Interconnect Block, 66MX Block, (1) 50 Pin Telco, Material	each	0	0	0	0
2117	Interconnect Block, 66MX Block, (2) 50 Pin Telco, Material	each	0	0	0	0
2118	Interconnect Block, 66MX Block, Labor	each	0	0	0	0
2119	Interconnect Block, 110 Type, (1) 50 Pin Telco, Material	each	0	0	0	0
2120	Interconnect Block, 110 Type, (2) 50 Pin Telco, Material	each	0	0	0	0
2121	Interconnect Block, 110 Type, Labor	each	0	0	0	0
2122	Cross Connect Block, 66M1-50, Material	each	16	24	206	49
2123	Cross Connect Block, 66M1-50, Labor	each	16	24	206	49
2124	Cross Connect Block, 89B Bracket, Material	each	7	16	6	65
2125	Cross Connect Block, 89B Bracket, Labor	each	6	16	6	67
2126	Cross Connect Block, Hinged Cover, Material	each	0	1	0	37
2127	Cross Connect Block, Hinged Cover, Labor	each	0	1	0	37
2128	Cross Connect Block, Labels, Material	each	0	1	0	0
2129	Cross Connect Block, Labels, Labor	each	0	1	0	0
2130	Cross Connect Block, 110 Type, 100-Pair, Material	each	22	130	0	**30**
2131	Cross Connect Block, 110 Type, 100-pair, Labor	each	14	126	0	**5**
2132	Cross Connect Block, 110 Type, 100 Pr. w/C4's, Material	each	New	New	New	New

2133	Cross Connect Block, 110 Type, 100 Pr. w/C4's, Labor	each	New	New	New	New
2134	Cross Connect Block, 110 Type, 100 Pr. w/C5's, Material	each	New	New	New	New
2135	Cross Connect Block, 110 Type, 100 Pr. w/C5's, Labor	each	New	New	New	New
2136	Cross Connect Block, 110 Type, 300-Pair, Material	each	2	15	2	**5**
2137	Cross Connect Block, 110 Type, 300-Pair, Labor	each	0	15	2	**5**
2138	Cross Connect Block, 110 Type, 300 Pr. w/C4's, Material	each	New	New	New	New
2139	Cross Connect Block, 110 Type, 300 Pr. w/C4's, Labor	each	New	New	New	New
2140	Cross Connect Block, 110 Type, 300 Pr. w/C5's, Material	each	New	New	New	New
2141	Cross Connect Block, 110 Type, 300 Pr. w/C5's, Labor	each	New	New	New	New
2142	Cross Connect Block, 110 Type Rack Mount, Material	each	0	0	0	**0**
2143	Cross Connect Block, 110 Type Rack Mount, Labor	each	7	0	0	**0**
2144	Cross Connect Module, 110 Type C4, Material	each	0	1045	0	**25**
2145	Cross Connect Module, 110 Type C5, Material	each	290	1479	0	**180**
2146	Cross Connect Module, 110 Type C4-C5, Labor	each	290	2566	0	**240**
2147	Cross Connect Block, 6-110 Type, 64 Pr. w/6-110 C4's, Mat.	each	New	New	New	New
2148	Cross Connect Block, 6-110 Type, 64 Pr. w/6-110 C4's, Lab.	each	New	New	New	New
2149	Cross Connect Block, 6-110 Type, 192 Pr. w/6-110 C4's, Mat.	each	New	New	New	New
2150	Cross Connect Block, 6-110 Type, 192 Pr. w/6-110 C4's, Lab.	each	New	New	New	New
2151	Cross Connect Block, 6-110 Type Rack Mount, Material	each	New	New	New	New
2152	Cross Connect Block, 6-110 Type Rack Mount, Labor	each	New	New	New	New
2153	Cross Connect Module, 6-110 Type C4, Material (single piece)	each	New	New	New	New
2154	Cross Connect Module, 6-110 Type C4, Labor	each	New	New	New	New
2155	Multiple Connect Block, 66B Block, 25 Pr., Material	each	0	1	11	0

2156	Multiple Connect Block, 66B Block, Labor	each	0	1	11	0
2157	Multiple Connect Block, 110 Bridge Block, Material	each	0	0	0	0
2158	Multiple Connect Block, 110 Bridge Block, Labor	each	0	0	0	0
2159	Cross Connect, 1 Pr., 10 Foot Avg., Material	each	22	8715	402	530
2160	Cross Connect, 1 Pr., 10 Foot Avg., Labor	each	212	8921	402	530
2161	Cross Connect, 2 Pr., 10 Foot Avg., Material	each	0	10	0	2
2162	Cross Connect, 2 Pr., 10 Foot Avg., Labor	each	0	10	0	2
2163	Cross Connect Wire, 1 Pr. Bulk, 1000 Foot, Material	reel	0	0	0	0
2164	Cross Connect Wire, 2 Pr. Bulk, 1000 Foot, Material	reel	0	0	0	0
2165	Cross Connect, 2 Position Bridging Clip, Material	each	0	0	0	0
2166	Cross Connect, 2 Position Bridging Clip, labor	each	0	0	0	0
2167	Termination, Binding-Post , 1 Pr., Labor	each	0	0	12	0
2168	Termination, Binding-Post , 4 Pr., Labor	each	0	0	26	0
2169	Termination, Insulation Displacement , 1 Pr., Labor	each	0	0	0	0
2170	Termination, Insulation Displacement, 50 Pr., Labor	each	2	59	2	786
2171	Termination, Insulation Displacement, 100 Pr., Labor	each	14	37	36	71
2172	Termination, IDC CAT-3, 5E, or 6+, 4 Pr., Labor	each	1434	9929	4243	3673
2173	Termination, IDC CAT- 3, 5E, or 6+, 25 Pr., Labor	each	0	85	577	19
2174	Telco Cable, 25 Pair, M-F, 5' Long, Material	each	0	0	0	0
2175	Telco Cable, 25 Pair, M-M, 5' Long, Material	each	0	0	0	0
2176	Telco Cable, 25 Pair, F-F, 5' Long, Material	each	0	0	0	0
2177	Telco Cable, 25 Pair, F-O, 5' Long, Material	each	0	0	0	0
2178	Telco Cable, 25 Pair, M-O, 5' Long, Material	each	0	1	0	0

2179	Telco Cable, 25 Pair, 5' Long, Labor	each	0	4	0	0
2180	Telco Cable, 25 Pair, M-F, 10' Long, Material	each	0	4	0	0
2181	Telco Cable, 25 Pair, M-M, 10' Long, Material	each	0	0	0	0
2182	Telco Cable, 25 Pair, F-F, 10' Long, Material	each	0	0	0	0
2183	Telco Cable, 25 Pair, F-O, 10' Long, Material	each	0	0	0	0
2184	Telco Cable, 25 Pair, M-O, 10' Long, Material	each	0	24	0	0
2185	Telco Cable, 25 Pair, 10' Long, Labor	each	0	24	0	0
2186	Telco Cable, 25 Pair, M-F, 15' Long Material	each	0	6	0	0
2187	Telco Cable, 25 Pair, M-M, 15' Long, Material	each	0	0	0	0
2188	Telco Cable, 25 Pair, F-F, 15' Long, Material	each	0	0	0	0
2189	Telco Cable, 25 Pair, F-O, 15' Long, Material	each	0	0	0	0
2190	Telco Cable, 25 Pair, M-O, 15' Long, Material	each	0	49	0	1
2191	Telco Cable, 25 Pair, 15' Long, Labor	each	0	90	0	1
2192	Telco Cable, 25 Pair, M-F, 25' Long Material	each	New	New	New	New
2193	Telco Cable, 25 Pair, M-M, 25' Long, Material	each	New	New	New	New
2194	Telco Cable, 25 Pair, F-F, 25' Long, Material	each	New	New	New	New
2195	Telco Cable, 25 Pair, F-O, 25' Long, Material	each	New	New	New	New
2196	Telco Cable, 25 Pair, M-O, 25' Long, Material	each	New	New	New	New
2197	Telco Cable, 25 Pair, 25' Long, Labor	each	New	New	New	New
2198	Telco Connector, 50 Pin, Female, Material	each	0	0	0	0
2199	Telco Connector, 50 Pin, Male, Material	each	0	172	7	12
2200	Telco Connector, 50 Pin, M or F, Labor	each	0	172	7	12
2201	Telco To Modular Jack Adapter, 4 Pin, Material	each	0	0	0	0

2202	Telco To Modular Jack Adapter, 6 Pin, Material	each	0	0	0	0
2203	Telco To Modular Jack Adapter, 8 Pin, Material	each	0	0	0	0
2204	Telco To Modular Plug Adapter, 4 Pin, Material	each	0	0	0	0
2205	Telco To Modular Plug Adapter, 6 Pin, Material	each	0	0	0	0
2206	Telco To Modular Plug Adapter, 8 Pin, Material	each	0	0	0	0
2207	Telco To Modular Jack/Plug Adapter, Labor	each	0	0	0	0
2208	Modular splitter, 568B plug to two (2) USOC jacks, RJ-45, Mat.	each	New	New	New	New
2209	Modular splitter, 568B plug to four (4) USOC jacks, RJ-45, Mat.	each	New	New	New	New
2210	Modular splitter, 568B two or four-way, RJ-45, Labor	each	New	New	New	New
*	**FIBER OPTIC UNITS**					
3001	Multi Mode 2 Fiber, UL-OFNR, Indoor, Material	ft	0	231	0	0
3002	Multi Mode 6 Fiber, UL-OFNR, Indoor, Material	ft	260	1107	229	250
3003	Multi Mode 12 Fiber, UL-OFNR, Indoor, Material	ft	0	2930	0	300
3004	Multi Mode 24 Fiber, UL-OFNR, Indoor, Material	ft	0	0	0	25
3005	Single Mode 2 Fiber, UL-OFNR, Indoor, Material	ft	0	0	0	0
3006	Single Mode 6 Fiber, UL-OFNR, Indoor, Material	ft	0	340	0	0
3007	Single Mode 12 Fiber, UL-OFNR, Indoor, Material	ft	0	0	0	0
3008	Single Mode 24 Fiber, UL-OFNR, Indoor, Material	ft	0	0	0	0
3009	Composite Fiber, 12 MM & 6 SM , UL-OFNR, Indoor, Mat.	ft	0	0	0	0
3010	Composite Fiber, 24 MM & 12 SM , UL-OFNR, Indoor, Mat.	ft	0	0	0	0
3011	Multi Mode 2 Fiber, UL-OFNP, Plenum, Material	ft	0	83	0	0
3012	Multi Mode 6 Fiber, UL-OFNP, Plenum, Material	ft	0	1392	1464	0
3013	Multi Mode 12 Fiber, UL-OFNP, Plenum, Material	ft	0	572	708	400

3014	Multi Mode 24 Fiber, UL-OFNP, Plenum, Material	ft	0	780	0	0
3015	Single Mode 2 Fiber, UL-OFNP, Plenum, Material	ft	0	0	0	0
3016	Single Mode 6 Fiber, UL-OFNP, Plenum, Material	ft	0	0	0	0
3017	Single Mode 12 Fiber, UL-OFNP, Plenum, Material	ft	0	988	160	0
3018	Single Mode 24 Fiber, UL-OFNP, Plenum, Material	ft	New	New	New	New
3019	Composite Fiber, 12 MM & 6 SM , UL-OFNP Plenum, Material	ft	0	0	0	0
3020	Composite Fiber, 24 MM & 12 SM , UL-OFNP Plenum, Material	ft	0	0	0	0
3021	Indoor Fiber, any size, Riser or Plenum, Labor Single	ft	260	6229	3211	725
3022	Indoor Fiber, any size, Riser or Plenum, Labor Multiple	ft	0	2194	0	250
3023	Multi Mode 6 Fiber, Filled Riser, In/Out, Material	ft	468	0	0	0
3024	Multi Mode 12 Fiber, Filled Riser, In/Out, Material	ft	468	0	301	0
3025	Multi Mode 24 Fiber, Filled Riser In/Out, Material	ft	0	0	0	0
3026	Multi Mode 36 Fiber, Filled Riser, In/Out, Material	ft	0	0	0	0
3027	Multi Mode 48 Fiber, Filled Riser, In/Out, Material	ft	0	0	0	0
3028	Multi Mode 72 Fiber, Filled Riser, In/Out, Material	ft	0	0	0	0
3029	Multi Mode 96 Fiber, Filled Riser, In/Out, Material	ft	New	New	New	New
3030	Multi Mode 144 Fiber, Filled Riser, In/Out, Material	ft	New	New	New	New
3031	Single Mode 6 Fiber, Filled Riser, In/Out, Material	ft	0	0	0	0
3032	Single Mode 12 Fiber, Filled Riser, In/Out, Material	ft	0	0	0	0
3033	Single Mode 24 Fiber, Filled Riser, In/Out, Material	ft	0	0	0	0
3034	Single Mode 36 Fiber, Filled Riser, In/Out, Material	ft	New	New	New	New
3035	Single Mode 48 Fiber, Filled Riser, In/Out, Material	ft	New	New	New	New
3036	Single Mode 72 Fiber, Filled Riser, In/Out, Material	ft	New	New	New	New

3037	Single Mode 96 Fiber, Filled Riser, In/Out, Material	ft	New	New	New	New
3038	Single Mode 144 Fiber, Filled Riser, In/Out, Material	ft	New	New	New	New
3039	Comp. Fiber, 12 MM & 6 SM, Filled Riser, In/Out, Material	ft	0	0	0	0
3040	Comp. Fiber, 24 MM & 12 SM, Filled Riser, In/Out, Material	ft	0	0	0	0
3041	Comp. Fiber, 48 MM & 24 SM, Filled Riser, In/Out, Material	ft	New	New	New	New
3042	Multi Mode 6 Fiber, UL-OFNP, Outdoor Plenum, Material	ft	New	New	New	New
3043	Multi Mode 12 Fiber, UL-OFNP, Outdoor Plenum, Material	ft	New	New	New	New
3044	Multi Mode 24 Fiber, UL-OFNP, Outdoor Plenum, Material	ft	New	New	New	New
3045	Multi Mode 36 Fiber, UL-OFNP, Outdoor Plenum, Material	ft	New	New	New	New
3046	Multi Mode 48 Fiber, UL-OFNP, Outdoor Plenum, Material	ft	New	New	New	New
3047	Multi Mode 72 Fiber, UL-OFNP, Outdoor Plenum, Material	ft	New	New	New	New
3048	Multi Mode 144 Fiber, UL-OFNP, Outdoor Plenum, Material	ft	New	New	New	New
3049	Single Mode 6 Fiber, UL-OFNP, Outdoor Plenum, Material	ft	New	New	New	New
3050	Single Mode 12 Fiber, UL-OFNP, Outdoor Plenum, Material	ft	New	New	New	New
3051	Single Mode 24 Fiber, UL-OFNP, Outdoor Plenum, Material	ft	New	New	New	New
3052	Single Mode 36 Fiber, UL-OFNP, Outdoor Plenum, Material	ft	New	New	New	New
3053	Single Mode 48 Fiber, UL-OFNP, Outdoor Plenum, Material	ft	New	New	New	New
3054	Single Mode 72 Fiber, UL-OFNP, Outdoor Plenum, Material	ft	New	New	New	New
3055	Single Mode 96 Fiber, UL-OFNP, Outdoor Plenum, Material	ft	New	New	New	New
3056	Single Mode 144 Fiber, UL-OFNP, Outdoor Plenum, Material	ft	New	New	New	New
3057	Comp. Fiber, 12 MM & 6 SM, UL-OFNP, Outdoor Plen., Mat.	ft	New	New	New	New
3058	Comp. Fiber, 24 MM & 12 SM, UL-OFNP, Outdoor Plen., Mat.	ft	New	New	New	New
3059	Comp. Fiber, 48 MM & 24 SM, UL-OFNP, Outdoor Plen., Mat.	ft	New	New	New	New

3060	Outdoor Fiber, Any size, Labor	ft	0	0	301	0
3061	Fiber Term. Cabinet, 12 Port, Rack Mount, Material	each	2	25	18	4
3062	Fiber Term. Cabinet, 12 Port, Rack Mount, Labor	each	0	25	19	4
3063	Fiber Term. Cabinet, 24 Port, Rack Mount, Material	each	0	6	3	3
3064	Fiber Term. Cabinet, 24 Port, Rack Mount, Labor	each	0	6	3	3
3065	Fiber Term. Cabinet, 36 Port, Rack Mount, Material	each	0	3	0	3
3066	Fiber Term. Cabinet, 36 Port, Rack Mount, Labor	each	0	3	0	1
3067	Fiber Term. Cabinet, 72 Port, Rack Mount, Material	each	0	5	0	0
3068	Fiber Term. Cabinet, 72 Port, Rack Mount, Labor	each	0	6	0	0
3069	Fiber Splice Cabinet, Up To 24 Port, Rack Mount, Material	each	0	0	1	0
3070	Fiber Splice Cabinet, Up To 24 Port, Rack Mount, Labor	each	0	0	1	0
3071	Fiber Splice Cabinet, Up To 72 Port, Rack Mount, Material	each	0	0	0	0
3072	Fiber Splice Cabinet, Up To 72 Port, Rack Mount, Labor	each	0	0	0	0
3073	Fiber Splice Cabinet, Up To 144 Port, Rack Mount, Material	each	New	New	New	New
3074	Fiber Splice Cabinet, Up To 144 Port, Rack Mount, Labor	each	New	New	New	New
3075	Fiber Term. Cabinet, 12 Port, Wall Mount, Material	each	2	13	11	4
3076	Fiber Term. Cabinet, 12 Port, Wall Mount, Labor	each	2	13	5	2
3077	Fiber Term. Cabinet, 24 Port, Wall Mount, Material	each	0	0	0	0
3078	Fiber Term. Cabinet, 24 Port, Wall Mount, Labor	each	0	0	0	0
3079	Fiber Term. Cabinet, 36 Port, Wall Mount, Material	each	New	New	New	New
3080	Fiber Term. Cabinet, 36 Port, Wall Mount, Labor	each	New	New	New	New
3081	Fiber Term. Cabinet, 48 Port, Wall Mount, Material	each	0	0	0	0
3082	Fiber Term. Cabinet, 48 Port, Wall Mount, Labor	each	0	0	0	0

3083	Fiber Term. Cabinet, 72 Port, Wall Mount, Material	each	0	0	0	1
3084	Fiber Term. Cabinet, 72 Port, Wall Mount, Labor	each	0	0	0	1
3085	Fiber Term. Cabinet, 12 Port, Environmental, Material	each	New	New	New	New
3086	Fiber Term. Cabinet, 12 Port, Environmental, Labor	each	New	New	New	New
3087	Fiber Term. Cabinet, 36 Port, Environmental, Material	each	New	New	New	New
3088	Fiber Term. Cabinet, 36 Port, Environmental, Labor	each	New	New	New	New
3089	Fiber Term. Cabinet, 72 Port, Environmental, Material	each	New	New	New	New
3090	Fiber Term. Cabinet, 72 Port, Environmental, Labor	each	New	New	New	New
3091	Fiber Coupler Panel, With 6 ST Couplers MM, Material	each	9	16	49	51
3092	Fiber Coupler Panel, With 3 SC Duplex Couplers MM, Mat.	each	0	133	102	0
3093	Fiber Coupler Panel, With 3 MT-RJ Duplex Couplers MM, Mat.	each	2	0	100	0
3094	Fiber Coupler Panel, With 6 ST Couplers SM, Material	each	0	2	0	0
3095	Fiber Coupler Panel, With 3 SC Duplex Couplers SM, Mat.	each	0	12	4	0
3096	Fiber Coupler Panel, With 3 MT-RJ Duplex Couplers SM, Mat.	each	0	0	0	0
3097	Fiber Coupler Panel, With 6 ST Duplex Couplers MM, Mat.	each	New	New	New	New
3098	Fiber Coupler Panel, With 6 SC Duplex Couplers MM, Mat.	each	New	New	New	New
3099	Fiber Coupler Panel, With 6 MT-RJ Duplex Couplers MM, Mat.	each	New	New	New	New
3100	Fiber Coupler Panel, With 6 ST Duplex Couplers SM, Mat.	each	New	New	New	New
3101	Fiber Coupler Panel, With 6 SC Duplex Couplers SM, Mat.	each	New	New	New	New
3102	Fiber Coupler Panel, With 6 MT-RJ Duplex Couplers SM, Mat.	each	New	New	New	New
3103	Fiber Coupler Panel, Blank, Material	each	6	19	15	6
3104	Fiber Coupler Panel, MM or SM, Labor	each	11	182	46	35
3105	Fiber Breakout Kit, In/Outdoor Fiber, Material	each	0	0	6	2

3106	Fiber Breakout Kit, In/Outdoor Fiber, Labor	each	0	0	0	0
3107	Fiber Termination, ST Connector MM, Material	each	76	160	304	284
3108	Fiber Termination, ST Connector MM, Labor	each	76	160	224	236
3109	Fiber Termination, SC Connector MM, Material	each	4	660	16	0
3110	Fiber Termination, SC Connector MM, Labor	each	4	660	16	0
3111	Fiber Termination, MT-RJ Connector MM, Material	each	New	New	New	New
3112	Fiber Termination, MT-RJ Connector MM, Labor	each	New	New	New	New
3113	Fiber Termination, ST Connector SM, Material	each	0	24	0	0
3114	Fiber Termination, ST Connector SM, Labor	each	0	24	0	0
3115	Fiber Termination, SC Connector SM, Material	each	0	72	24	0
3116	Fiber Termination, SC Connector SM, Labor	each	0	72	24	0
3117	Fiber Termination, MT-RJ Connector SM, Material	each	New	New	New	New
3118	Fiber Termination, MT-RJ Connector SM, Labor	each	New	New	New	New
3119	Fusion Splice, MM or SM, Per Fiber, Material	each	0	1	12	0
3120	Fusion Splice, MM or SM, Per Fiber, Labor	each	0	24	12	0
3121	Mechanical Splice, MM or SM, Per Fiber, Material	each	0	0	0	0
3122	Mechanical Splice, MM or SM, Per Fiber, Labor	each	0	0	0	0
3123	Fiber Splice Case, Up To 24 Strand, Indoor, Material	each	0	0	0	0
3124	Fiber Splice Case, Up To 24 Strand, Indoor, Labor	each	0	0	0	0
3125	Fiber Splice Case, Up To 72 Strand, Indoor, Material	each	0	0	0	0
3126	Fiber Splice Case, Up To 72 Strand, Indoor, Labor	each	0	2	0	0
3127	Fiber Splice Case, Up To 144 Strand, Indoor, Material	each	New	New	New	New
3128	Fiber Splice Case, Up To 144 Strand, Indoor, Labor	each	New	New	New	New

3129	Fiber Splice Tray, Fusion, 24 Strand, Material	each	New	New	New	New
3130	Fiber Splice Tray, Fusion, 24 Strand, Labor	each	New	New	New	New
3131	Fiber Jumper MM, Duplex, ST/ST, 1 Meter, Material	each	10	4	7	0
3132	Fiber Jumper MM, Duplex, ST/ST, 2 Meter, Material	each	0	0	5	20
3133	Fiber Jumper MM, Duplex, ST/ST, 3 Meter, Material	each	0	0	0	6
3134	Fiber Jumper MM, Duplex, ST/ST, 5 Meter, Material	each	0	0	0	0
3135	Fiber Jumper MM, Duplex, ST/ST, 8 Meter, Material	each	New	New	New	New
3136	Fiber Jumper MM, Duplex, ST/ST, 10 Meter, Material	each	New	New	New	New
3137	Fiber Jumper MM, Duplex, ST/ST, 15 Meter, Material	each	New	New	New	New
3138	Fiber Jumper MM, Duplex, ST/ST, 25 Meter, Material	each	New	New	New	New
3139	Fiber Jumper MM, Duplex, ST/ST, 30 Meter, Material	each	New	New	New	New
3140	Fiber Jumper MM, Duplex, SC/ST, 1 Meter, Material	each	New	New	New	New
3141	Fiber Jumper MM, Duplex, SC/ST, 2 Meter, Material	each	New	New	New	New
3142	Fiber Jumper MM, Duplex, SC/ST, 3 Meter, Material	each	New	New	New	New
3143	Fiber Jumper MM, Duplex, SC/ST, 5 Meter, Material	each	New	New	New	New
3144	Fiber Jumper MM, Duplex, SC/ST, 8 Meter, Material	each	New	New	New	New
3145	Fiber Jumper MM, Duplex, SC/ST, 10 Meter, Material	each	New	New	New	New
3146	Fiber Jumper MM, Duplex, SC/ST, 15 Meter, Material	each	New	New	New	New
3147	Fiber Jumper MM, Duplex, SC/ST, 25 Meter, Material	each	New	New	New	New
3148	Fiber Jumper MM, Duplex, SC/ST, 30 Meter, Material	each	New	New	New	New
3149	Fiber Jumper MM, Duplex, SC/SC, 1 Meter, Material	each	New	New	New	New
3150	Fiber Jumper MM, Duplex, SC/SC, 2 Meter, Material	each	New	New	New	New
3151	Fiber Jumper MM, Duplex, SC/SC, 3 Meter, Material	each	New	New	New	New

3152	Fiber Jumper MM, Duplex, SC/SC, 5 Meter, Material	each	New	New	New	New
3153	Fiber Jumper MM, Duplex, SC/SC, 8 Meter, Material	each	New	New	New	New
3154	Fiber Jumper MM, Duplex, SC/SC, 10 Meter, Material	each	New	New	New	New
3155	Fiber Jumper MM, Duplex, SC/SC, 15 Meter, Material	each	New	New	New	New
3156	Fiber Jumper MM, Duplex, SC/SC, 25 Meter, Material	each	New	New	New	New
3157	Fiber Jumper MM, Duplex, SC/SC, 30 Meter, Material	each	New	New	New	New
3158	Fiber Jumper MM, Duplex, ST/MT-RJ, 1 Meter, Material	each	New	New	New	New
3159	Fiber Jumper MM, Duplex, ST/MT-RJ, 2 Meter, Material	each	New	New	New	New
3160	Fiber Jumper MM, Duplex, ST/MT-RJ, 3 Meter, Material	each	New	New	New	New
3161	Fiber Jumper MM, Duplex, ST/MT-RJ, 5 Meter, Material	each	New	New	New	New
3162	Fiber Jumper MM, Duplex, ST/MT-RJ, 8 Meter, Material	each	New	New	New	New
3163	Fiber Jumper MM, Duplex, ST/MT-RJ, 10 Meter, Material	each	New	New	New	New
3164	Fiber Jumper MM, Duplex, ST/MT-RJ, 15 Meter, Material	each	New	New	New	New
3165	Fiber Jumper MM, Duplex, ST/MT-RJ, 25 Meter, Material	each	New	New	New	New
3166	Fiber Jumper MM, Duplex, ST/MT-RJ, 30 Meter, Material	each	New	New	New	New
3167	Fiber Jumper MM, Duplex, SC/MT-RJ, 1 Meter, Material	each	New	New	New	New
3168	Fiber Jumper MM, Duplex, SC/MT-RJ, 2 Meter, Material	each	New	New	New	New
3169	Fiber Jumper MM, Duplex, SC/MT-RJ, 3 Meter, Material	each	New	New	New	New
3170	Fiber Jumper MM, Duplex, SC/MT-RJ, 5 Meter, Material	each	New	New	New	New
3171	Fiber Jumper MM, Duplex, SC/MT-RJ, 8 Meter, Material	each	New	New	New	New
3172	Fiber Jumper MM, Duplex, SC/MT-RJ, 10 Meter, Material	each	New	New	New	New
3173	Fiber Jumper MM, Duplex, SC/MT-RJ, 15 Meter, Material	each	New	New	New	New
3174	Fiber Jumper MM, Duplex, SC/MT-RJ, 25 Meter, Material	each	New	New	New	New

3175	Fiber Jumper MM, Duplex, SC/MT-RJ, 30 Meter, Material	each	New	New	New	New
3176	Fiber Jumper MM, Duplex, MT-RJ/MT-RJ, 1 Meter, Material	each	New	New	New	New
3177	Fiber Jumper MM, Duplex, MT-RJ/MT-RJ, 2 Meter, Material	each	New	New	New	New
3178	Fiber Jumper MM, Duplex, MT-RJ/MT-RJ, 3 Meter, Material	each	New	New	New	New
3179	Fiber Jumper MM, Duplex, MT-RJ/MT-RJ, 5 Meter, Material	each	New	New	New	New
3180	Fiber Jumper MM, Duplex, MT-RJ/MT-RJ, 8 Meter, Material	each	New	New	New	New
3181	Fiber Jumper MM, Duplex, MT-RJ/MT-RJ, 10 Meter, Material	each	New	New	New	New
3182	Fiber Jumper MM, Duplex, MT-RJ/MT-RJ, 15 Meter, Material	each	New	New	New	New
3183	Fiber Jumper MM, Duplex, MT-RJ/MT-RJ, 25 Meter, Material	each	New	New	New	New
3184	Fiber Jumper MM, Duplex, MT-RJ/MT-RJ, 30 Meter, Material	each	New	New	New	New
3185	Fiber Jumper SM, Duplex, ST/ST, 1 Meter, Material	each	0	0	6	0
3186	Fiber Jumper SM, Duplex, ST/ST, 2 Meter, Material	each	0	4	0	0
3187	Fiber Jumper SM, Duplex, ST/ST, 3 Meter, Material	each	0	0	0	0
3188	Fiber Jumper SM, Duplex, ST/ST, 5 Meter, Material	each	0	0	0	0
3189	Fiber Jumper SM, Duplex, ST/ST, 8 Meter, Material	each	New	New	New	New
3190	Fiber Jumper SM, Duplex, ST/ST, 10 Meter, Material	each	New	New	New	New
3191	Fiber Jumper SM, Duplex, ST/ST, 15 Meter, Material	each	New	New	New	New
3192	Fiber Jumper SM, Duplex, ST/ST, 25 Meter, Material	each	New	New	New	New
3193	Fiber Jumper SM, Duplex, ST/ST, 30 Meter, Material	each	New	New	New	New
3194	Fiber Jumper SM, Duplex, SC/ST, 1 Meter, Material	each	New	New	New	New
3195	Fiber Jumper SM, Duplex, SC/ST, 2 Meter, Material	each	New	New	New	New
3196	Fiber Jumper SM, Duplex, SC/ST, 3 Meter, Material	each	New	New	New	New
3197	Fiber Jumper SM, Duplex, SC/ST, 5 Meter, Material	each	New	New	New	New

3198	Fiber Jumper SM, Duplex, SC/ST, 8 Meter, Material	each	New	New	New	New
3199	Fiber Jumper SM, Duplex, SC/ST, 10 Meter, Material	each	New	New	New	New
3200	Fiber Jumper SM, Duplex, SC/ST, 15 Meter, Material	each	New	New	New	New
3201	Fiber Jumper SM, Duplex, SC/ST, 25 Meter, Material	each	New	New	New	New
3202	Fiber Jumper SM, Duplex, SC/ST, 30 Meter, Material	each	New	New	New	New
3203	Fiber Jumper SM, Duplex, SC/SC, 1 Meter, Material	each	New	New	New	New
3204	Fiber Jumper SM, Duplex, SC/SC, 2 Meter, Material	each	New	New	New	New
3205	Fiber Jumper SM, Duplex, SC/SC, 3 Meter, Material	each	New	New	New	New
3206	Fiber Jumper SM, Duplex, SC/SC, 5 Meter, Material	each	New	New	New	New
3207	Fiber Jumper SM, Duplex, SC/SC, 8 Meter, Material	each	New	New	New	New
3208	Fiber Jumper SM, Duplex, SC/SC, 10 Meter, Material	each	New	New	New	New
3209	Fiber Jumper SM, Duplex, SC/SC, 15 Meter, Material	each	New	New	New	New
3210	Fiber Jumper SM, Duplex, SC/SC, 25 Meter, Material	each	New	New	New	New
3211	Fiber Jumper SM, Duplex, SC/SC, 30 Meter, Material	each	New	New	New	New
3212	Fiber Jumper SM, Duplex, ST/MT-RJ, 1 Meter, Material	each	New	New	New	New
3213	Fiber Jumper SM, Duplex, ST/MT-RJ, 2 Meter, Material	each	New	New	New	New
3214	Fiber Jumper SM, Duplex, ST/MT-RJ, 3 Meter, Material	each	New	New	New	New
3215	Fiber Jumper SM, Duplex, ST/MT-RJ, 5 Meter, Material	each	New	New	New	New
3216	Fiber Jumper SM, Duplex, ST/MT-RJ, 8 Meter, Material	each	New	New	New	New
3217	Fiber Jumper SM, Duplex, ST/MT-RJ, 10 Meter, Material	each	New	New	New	New
3218	Fiber Jumper SM, Duplex, ST/MT-RJ, 15 Meter, Material	each	New	New	New	New
3219	Fiber Jumper SM, Duplex, ST/MT-RJ, 25 Meter, Material	each	New	New	New	New
3220	Fiber Jumper SM, Duplex, ST/MT-RJ, 30 Meter, Material	each	New	New	New	New

3221	Fiber Jumper SM, Duplex, SC/MT-RJ, 1 Meter, Material	each	New	New	New	New
3222	Fiber Jumper SM, Duplex, SC/MT-RJ, 2 Meter, Material	each	New	New	New	New
3223	Fiber Jumper SM, Duplex, SC/MT-RJ, 3 Meter, Material	each	New	New	New	New
3224	Fiber Jumper SM, Duplex, SC/MT-RJ, 5 Meter, Material	each	New	New	New	New
3225	Fiber Jumper SM, Duplex, SC/MT-RJ, 8 Meter, Material	each	New	New	New	New
3226	Fiber Jumper SM, Duplex, SC/MT-RJ, 10 Meter, Material	each	New	New	New	New
3227	Fiber Jumper SM, Duplex, SC/MT-RJ, 15 Meter, Material	each	New	New	New	New
3228	Fiber Jumper SM, Duplex, SC/MT-RJ, 25 Meter, Material	each	New	New	New	New
3229	Fiber Jumper SM, Duplex, SC/MT-RJ, 30 Meter, Material	each	New	New	New	New
3230	Fiber Jumper SM, Duplex, MT-RJ/MT-RJ, 1 Meter, Material	each	New	New	New	New
3231	Fiber Jumper SM, Duplex, MT-RJ/MT-RJ, 2 Meter, Material	each	New	New	New	New
3232	Fiber Jumper SM, Duplex, MT-RJ/MT-RJ, 3 Meter, Material	each	New	New	New	New
3233	Fiber Jumper SM, Duplex, MT-RJ/MT-RJ, 5 Meter, Material	each	New	New	New	New
3234	Fiber Jumper SM, Duplex, MT-RJ/MT-RJ, 8 Meter, Material	each	New	New	New	New
3235	Fiber Jumper SM, Duplex, MT-RJ/MT-RJ, 10 Meter, Material	each	New	New	New	New
3236	Fiber Jumper SM, Duplex, MT-RJ/MT-RJ, 15 Meter, Material	each	New	New	New	New
3237	Fiber Jumper SM, Duplex, MT-RJ/MT-RJ, 25 Meter, Material	each	New	New	New	New
3238	Fiber Jumper SM, Duplex, MT-RJ/MT-RJ, 30 Meter, Material	each	New	New	New	New
3239	Fiber Jumper MM or SM, Duplex Cord, Labor	each	0	4	6	0
*	**LEGACY SYSTEM UNITS**					
4001	Coax Cable, RG-6, UL-CMR, Indoor, Material	ft	0	0	0	2000
4002	Coax Cable, RG-6, UL-CMP, Plenum, Material	ft	0	400	745	0
4003	Coax Cable, RG-11, UL-CMR, Indoor, Material	ft	0	0	0	0

4004	Coax Cable, RG-11, UL-CMP, Plenum, Material	ft	0	0	0	0
4005	Coax Cable, DS-3, UL-CMR, Indoor, Material	ft	New	New	New	New
4006	Coax Cable, DS-3, UL-CMP, Indoor, Material	ft	New	New	New	New
4007	Indoor Coax Cable, RG-6/11 & DS-3, Riser/Plenum, Labor Single	ft	0	560	0	1000
4008	Indoor Coax Cable, RG-6/11 & DS-3, Riser/Plenum, Labor Multi	ft	0	0	745	0
4009	Coax Connector, Crimp "F" Plug, RG-6 CMR, Material	each	0	0	0	16
4010	Coax Connector, Crimp "F" Plug, RG-6 CMP Plen., Material	each	0	4	0	0
4011	Coax Connector, Crimp "F" Plug, RG-11 CMR, Material	each	0	0	0	16
4012	Coax Connector, Crimp "F" Plug, RG-11 CMP Plen., Material	each	0	0	0	0
4013	Coax Connector, Crimp "BNC" Plug, RG-6 CMR, Material	each	New	New	New	New
4014	Coax Connector, Crimp "BNC" Plug, RG-6 CMP, Material	each	New	New	New	New
4015	Coax Connector, Crimp "BNC" Plug, RG-11 CMR, Material	each	New	New	New	New
4016	Coax Connector, Crimp "BNC" Plug, RG-11 CMP, Material	each	New	New	New	New
4017	Coax Connector, Crimp "BNC" Plug, DS-3 CMR, Material	each	New	New	New	New
4018	Coax Connector, Crimp "BNC" Plug, DS-3 CMP, Material	each	New	New	New	New
4019	Coax Connector, Crimp BNC/"F" Plug, Labor	each	0	4	0	8
4020	Balun, RG-58 to UTP, Material	each	0	0	0	0
4021	Balun, STP to UTP, 10/100Base-TX, Material	each	0	0	0	0
4022	Balun, STP to UTP, Token Ring, Material	each	0	0	0	0
4023	Balun, RG-58/STP to UTP, Labor	each	0	0	0	0
*	**DATA/LAN UNITS**					
5001	LAN Cable UTP, CAT-3 4-pair, UL-CMR, Indoor, Material	ft	131	13947	1500	39868
5002	LAN Cable UTP, CAT-3 4-pair, UL-CMP Plenum, Material	ft	0	36918	9268	50

5003	LAN Cable UTP, CAT-5E 4-pair, UL-CMR, Indoor, Material	ft	58506	143647	54585	106527
5004	LAN Cable UTP, CAT-5E 4-pair, UL-CMP Plenum, Material	ft	35558	78222	260074	141604
5005	LAN Cable UTP, CAT-6 4-pair , UL-CMR, Indoor Material	ft	35563	14917	372	30254
5006	LAN Cable UTP, CAT-6 4-pair, UL-CMP Plenum, Material	ft	39350	254355	9786	0
5007	LAN Cable UTP 4-pair, Indoor, UL-CMR/CMP , Labor Single	ft	47285	247777	148754	144948
5008	LAN Cable UTP 4-pair, Indoor, UL-CMR/CMP , Labor Multiple	ft	52823	265048	185884	169086
5009	LAN Cable UTP, CAT-5E 25-pair, UL-CMR, Indoor, Material	ft	0	0	169	0
5010	LAN Cable UTP, CAT-5E 25-pair, UL-CMP Plenum, Material	ft	0	500	305	0
5011	LAN Cable UTP 25-pair, Indoor, UL-CMR/CMP , Labor Single	ft	0	0	474	0
5012	LAN Cable UTP 25-pair, Indoor, UL-CMR/CMP , Labor Multiple	ft	0	0	0	0
5013	LAN Cable UTP, CAT-5E, Outdoor (direct buried) Material	ft	0	0	263	0
5014	LAN Cable UTP, CAT-5E, Outdoor (aerial) Material	ft	0	0	0	422
5015	LAN Cable UTP, CAT-5E, Outdoor Labor Single	ft	0	0	263	400
5016	LAN Cable UTP, CAT-5E, Outdoor Labor Multiple	ft	0	0	0	22
5017	CAT-3 Cable Run, UL-CMR PVC, Material	each	29	7	2	36
5018	CAT-3 Cable Run, UL-CMP Plenum, Material	each	8	27	0	3
5019	CAT-3 Cable Run, PVC/Plenum, Labor	each	29	35	2	33
5020	CAT-5E Cable Run, UL-CMR PVC, Material	each	130	63	48	95
5021	CAT-5E Cable Run, UL-CMP Plenum, Material	each	111	430	103	114
5022	CAT-5E Cable Run, PVC/Plenum, Labor	each	241	450	151	209
5023	CAT-6+ Cable Run, UL-CMR PVC, Material	each	1154	28	0	16
5024	CAT-6+ Cable Run, UL-CMP Plenum, Material	each	15	230	14	13
5025	CAT-6+ Cable Run, PVC/Plenum, Labor	each	1145	232	14	29

5026	Comm Outlet, 6P6C Voice Insert, Material	each	0	1	0	7
5027	Comm Outlet, 8P8C Voice Insert, Material	each	0	0	0	0
5028	Comm Outlet, CAT-3 LAN Insert, Material	each	52	522	180	252
5029	Comm Outlet, CAT-5E LAN Insert, Material	each	261	1562	2296	1849
5030	Comm Outlet, CAT-6+ LAN Insert, Material	each	435	2188	92	393
5031	Comm Outlet, Coax F Insert, Material	each	0	0	0	9
5032	Comm Outlet, Coax BNC Insert, Material	each	0	0	0	0
5033	Comm Outlet, RCA 110-style Insert, Material	each	New	New	New	New
5034	Comm Outlet, S-Video 110-style Insert, Material	each	New	New	New	New
5035	Comm Outlet, Fiber Optic ST Insert, Material	each	0	0	0	0
5036	Comm Outlet, Fiber Optic SC Insert, Material	each	0	0	0	0
5037	Comm Outlet, Fiber Optic MT-RJ Insert, Material	each	0	0	0	0
5038	Comm Outlet, Jack Insert, Labor	each	736	3992	2533	2542
5039	Comm Outlet, Blank Insert, Material	each	14	1086	36	78
5040	Comm Outlet, Blank Insert, Labor	each	14	1086	36	78
5041	Faceplate, 1 Port Single Gang Plastic, Material	each	189	680	752	474
5042	Faceplate, 2 Port Single Gang Plastic, Material	each	250	550	949	560
5043	Faceplate, 4 Port Single Gang Plastic, Material	each	18	774	48	219
5044	Faceplate, 6 Port Single Gang Plastic, Material	each	6	12	3	25
5045	Faceplate, 1 Port Single Gang SS, Material	each	New	New	New	New
5046	Faceplate, 2 Port Single Gang SS, Material	each	New	New	New	New
5047	Faceplate, 4 Port Single Gang SS, Material	each	New	New	New	New
5048	Faceplate, 6 Port Single Gang SS, Material	each	New	New	New	New

5049	Faceplate, Wall Phone, Single Gang SS, Material	each	New	New	New	New
5050	Faceplate, Single Gang, Plastic or Stainless Steel, Labor	each	New	New	New	New
5051	Faceplate, 6 Port Double Gang Plastic, Material	each	New	New	New	New
5052	Faceplate, 12 Port Double Gang Plastic, Material	each	New	New	New	New
5053	Faceplate, 6 Port Double SS, Material	each	New	New	New	New
5054	Faceplate, 12 Port Double Gang SS, Material	each	New	New	New	New
5055	Faceplate, Double Gang, Plastic or Stainless Steel, Labor	each	441	1690	1723	1238
5056	Faceplate, Blank, Single-Gang, Plastic, Material	each	11	36	0	6
5057	Faceplate, Blank, Single-Gang, SS, Material	each	0	36	0	8
5058	Faceplate, Blank, Single-Gang, Plastic or Stainless, Labor	each	0	0	0	0
5059	Faceplate, 3/8" Hole, Single-Gang, Plastic, Material	each	0	2	0	0
5060	Faceplate, 3/8" Hole, Single-Gang, SS, Material	each	0	3	0	0
5061	Faceplate, 3/8" Hole, Single-Gang, Plastic or Stainless, Labor	each	0	5	0	0
5062	Faceplate, Elect. Opening, 2 Port, SG Plastic, Material	each	0	0	0	0
5063	Faceplate, Elect. Opening, 2 Port, SG Metal, Material	each	0	0	0	0
5064	Faceplate, Elect. Opening, Plastic or Stainless Steel, Labor	each	0	0	0	0
5065	Faceplate, 106 frame/strap, 2 Port, Material	each	New	New	New	New
5066	Faceplate, 106 frame/strap, 4 Port, Material	each	New	New	New	New
5067	Faceplate, 106 frame/strap, Labor	each	New	New	New	New
5068	Faceplate, Mod. Furniture, 2 Port, Material	each	18	0	0	0
5069	Faceplate, Mod. Furniture, 4 Port - Quad, Material	each	New	New	New	New
5070	Faceplate, Mod. Furniture, 4 Port - Linear, Material	each	0	44	0	0
5071	Faceplate, Mod. Furn., Labor	each	14	44	0	0

5072	Faceplate, Surface Biscuit Box, 2 Port, Material	each	19	89	0	8
5073	Faceplate, Surface Biscuit Box, 4 Port, Material	each	0	12	0	10
5074	Faceplate, Surface Biscuit Box, Labor	each	19	259	0	2
5075	Patch Panel, CAT-5E 110, on 89B Bracket, 12 Port, Material	each	0	9	5	4
5076	Patch Panel, CAT-5E 110, on 89B Bracket, 12 Port, Labor	each	0	5	5	3
5077	Patch Panel, CAT-5E 110, Rack Mount, 24 Port, Material	each	17	15	20	27
5078	Patch Panel, CAT-5E 110, Rack Mount, 48 Port, Material	each	3	47	14	43
5079	Patch Panel, CAT-5E 110, Rack Mount, Labor	each	20	64	34	64
5080	Patch Panel, CAT-6+ 110, Rack Mount, 8 Pin, 24 Port, Mat.	each	19	21	1	18
5081	Patch Panel, CAT-6+ 110, Rack Mount, 8 Pin, 48 Port, Mat.	each	50	71	2	10
5082	Patch Panel, CAT-6+ 110, Rack Mount, Labor	each	65	86	3	25
5083	Patch Panel, Telco, Rack Mount, 8P8C, 24 Port, Material	each	0	0	0	0
5084	Patch Panel, Telco, Rack Mount, 8P8C, 24 Port, Labor	each	0	0	0	0
5085	Patch Cord, CAT-3, 4 Pair, 3' Long, Material	each	0	0	0	0
5086	Patch Cord, CAT-3, 4 Pair, 7' Long, Material	each	0	25	0	15
5087	Patch Cord, CAT-3, 4 Pair, 14' Long, Material	each	0	25	0	204
5088	Patch Cord, CAT-3, Labor	each	0	24	0	0
5089	Patch Cord, CAT-5E, 4 Pair, 3' Long, Material	each	196	1074	870	437
5090	Patch Cord, CAT-5E, 4 Pair, 5' Long, Material	each	New	New	New	New
5091	Patch Cord, CAT-5E, 4 Pair, 7' Long, Material	each	45	5072	1120	813
5092	Patch Cord, CAT-5E, 4 Pair, 10' Long, Material	each	New	New	New	New
5093	Patch Cord, CAT-5E, 4 Pair, 15' Long, Material	each	864	419	384	1171
5094	Patch Cord, CAT-5E, 4 Pair, 20' Long, Material	each	New	New	New	New

5095	Patch Cord, CAT-5E, Labor	each	13	0	0	12
5096	Patch Cord, CAT-6+, 4 Pair, 3' Long, Material	each	349	1090	50	395
5097	Patch Cord, CAT-6+, 4 Pair, 5' Long, Material	each	New	New	New	New
5098	Patch Cord, CAT-6+, 4 Pair, 7' Long, Material	each	42	795	46	185
5099	Patch Cord, CAT-6+, 4 Pair, 10' Long, Material	each	New	New	New	New
5100	Patch Cord, CAT-6+, 4 Pair, 15' Long, Material	each	306	677	4	362
5101	Patch Cord, CAT-6+, 4 Pair, 20' Long, Material	each	New	New	New	New
5102	Patch Cord, CAT-6+, Labor	each	1	50	0	102
5103	Modular Plug, 8 PIN, Solid Wire, CAT-5E, Material	each	20	433	0	160
5104	Modular Plug, 8 PIN, Stranded Wire, CAT-5E, Material	each	0	6	0	0
5105	Modular Plug, 8 PIN, Solid/Stranded Wire, CAT-5E, Labor	each	20	327	0	10
5106	Modular Plug, 110 Style 1-pair, Solid/Stranded, CAT-5E, Mat.	each	0	0	0	0
5107	Modular Plug, 110 Style, 1-pair, Solid/Stranded, CAT-5E, Labor	each	0	0	0	0
5108	Modular Plug, 110 Style 4-pair, Solid/Stranded, CAT-5E, Mat.	each	New	New	New	New
5109	Modular Plug, 110 Style, 4-pair, Solid/Stranded, CAT-5E, Labor	each	New	New	New	New
5110	Modular Plug, 6-110 Style 1-pair, Solid/Stranded, CAT-5E, Mat.	each	New	New	New	New
5111	Modular Plug, 6-110 Style, 1-pair, Solid/Stranded, CAT-5E, Lab.	each	New	New	New	New
5112	Modular Plug, 6-110 Style 4-pair, Solid/Stranded, CAT-5E, Mat.	each	New	New	New	New
5113	Modular Plug, 6-110 Style, 4-pair, Solid/Stranded, CAT-5E, Labor	each	New	New	New	New
5114	Protector, LAN CAT-5E, 8 PIN, Material	each	20	0	2	0
5115	Protector, LAN, M to F, Labor	each	20	0	2	0
*	**SUPPORT SYSTEM HARWARE UNITS**					
6001	Relay Rack, Free Standing 19" w x 84" h, Material	each	31	22	5	28

6002	Relay Rack, Free Standing 19" w x 84" h, Labor	each	31	23	5	28
6003	Relay Rack, Wall Mount 19" w x 36" h x 15" d, Hinged, Mat.	each	1	3	0	15
6004	Relay Rack, Wall Mount 19" w x 36" h x 15" d, Hinged, Labor	each	1	3	0	15
6005	Patch Panel, Hinged Wall Mount Bracket, 3.5" wide, Material	each	13	9	2	7
6006	Patch Panel, Hinged Wall Mount Bracket, 7" wide, Material.	each	1	5	0	2
6007	Patch Panel, Hinged Wall Mount Bracket, Labor	each	14	11	2	8
6008	Shelf, 19" Rack Mount, Material	each	28	0	0	2
6009	Shelf, 19" Rack Mount, Labor	each	28	0	0	2
6010	Shelf, Heavy Duty, 19" Rack Mount, Material	each	New	New	New	New
6011	Shelf, Heavy Duty, 19" Rack Mount, Labor	each	New	New	New	New
6012	Frame & (4) 89B's, 19" Rack Mount, Material	each	0	1	0	0
6013	Frame & (4) 89B's, 19" Rack Mount, Labor	each	0	2	0	0
6014	Frame & (8) 89B's, 19" Rack Mount, Material	each	New	New	New	New
6015	Frame & (8) 89B's, 19" Rack Mount, Labor	each	New	New	New	New
6016	Rack Mount Kit 19", Building Entrance Protector, Material	each	0	0	0	0
6017	Rack Mount Kit 19", Building Entrance Protector, Labor	each	0	0	0	0
6018	Power Surge Strip, Horizontal, Rack Mount, Material	each	1	0	1	20
6019	Power Surge Strip, Horizontal, Rack Mount, Labor	each	1	0	1	20
6020	Power Surge Strip, Vertical, Rack Mount, Material	each	New	New	New	New
6021	Power Surge Strip, Vertical, Rack Mount, Labor	each	New	New	New	New
6022	Cabinet, Floor Type, 84" high, Material	each	0	1	0	0
6023	Cabinet, Floor Type, 84" high, Labor	each	0	1	0	0
6024	Cabinet, Floor Type, 48" high, Material	each	0	0	0	0

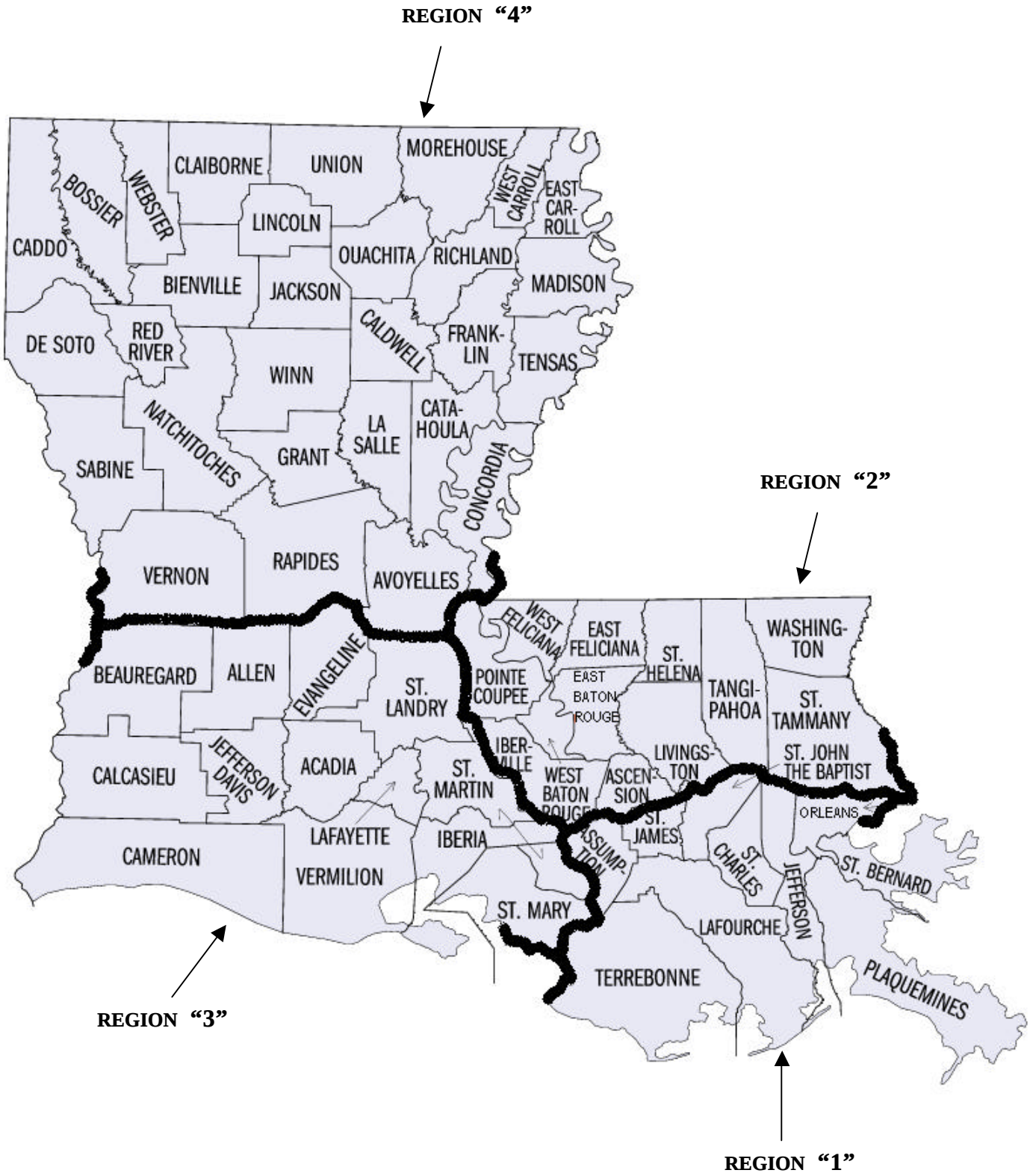
6025	Cabinet, Floor Type, 48" high, Labor	each	0	0	0	0
6026	Cabinet Fan Unit, Floor Type, Material	each	0	1	0	0
6027	Cabinet Fan Unit, Floor Type, Labor	each	0	1	0	0
6028	Cabinet Shelf, Floor Type, Material	each	0	0	0	0
6029	Cabinet Shelf, Floor Type, Labor	each	0	0	0	0
6030	Cabinet, Wall Type, 24" high, Material	each	0	1	0	0
6031	Cabinet, Wall Type, 24" high, Labor	each	0	1	0	0
6032	Cabinet, Wall Type, 48" high, Material	each	0	0	8	1
6033	Cabinet, Wall Type, 48" high, Labor	each	0	0	8	1
6034	Cabinet Fan Unit - Wall Type, Material	each	0	1	8	1
6035	Cabinet Fan Unit - Wall Type, Labor	each	0	1	8	1
6036	Cabinet, Compact Wall Type, 32" high, Material	each	0	0	1	0
6037	Cabinet, Compact Wall Type, 32" high, Labor	each	0	0	1	0
6038	Wire Management Panel, Horizontal, 2-RU, Front Only, Mat.	each	79	168	38	69
6039	Wire Management Panel, Horiz., 2-RU, Front Rungs Only, Mat.	each	New	New	New	New
6040	Wire Management Panel, Horizontal, 2-RU, Front/Rear, Mat.	each	New	New	New	New
6041	Wire Management Panel, Horizontal, Support Bar, Material	each	New	New	New	New
6042	Wire Management Panel, Horizontal, Labor	each	79	168	38	72
6043	Wire Management Panel, Vertical, Front Only, Material	each	53	110	12	65
6044	Wire Management Panel, Vertical, Front/Rear, Material	each	New	New	New	New
6045	Wire Management Panel, Vertical, Labor	each	53	110	12	65
6046	Wire Management, Vertical Support Bracket, Material	each	New	New	New	New
6047	Wire Management, Vertical Support Bracket, Labor	each	New	New	New	New

6048	Wire Management Panel, Fiber, Upper Tray, Material	each	New	New	New	New
6049	Wire Management Panel, Fiber, Lower Tray, Material	each	New	New	New	New
6050	Wire Management Panel, Fiber, Lower Double Tray, Material	each	New	New	New	New
6051	Wire Management Panel, Fiber, Transition Plate, Material	each	New	New	New	New
6052	Wire Management Panel, Fiber, Central Rounting Pnl, Material	each	New	New	New	New
6053	Wire Management Panel, Fiber, Labor	each	New	New	New	New
6054	Cable Tray , 6" Wide, 5' Long, 6" Height, Material	5-ft	New	New	New	New
6055	Cable Tray , 6" Wide, 5' Long, 6" Height, Labor	5-ft	New	New	New	New
6056	Cable Tray , 6" Wide, 10' Long, 6" Height, Material	10-ft	0	1	0	0
6057	Cable Tray , 6" Wide, 10' Long, 6" Height, Labor	10-ft	0	1	0	0
6058	Cable Tray , 12" Wide, 5' Long, 6" Height, Material	5-ft	New	New	New	New
6059	Cable Tray , 12" Wide, 5' Long, 6" Height, Labor	5-ft	New	New	New	New
6060	Cable Tray , 12" Wide, 10' Long, 6" Height, Material	10-ft	10	2	3	12
6061	Cable Tray , 12" Wide, 10' Long, 6" Height, Labor	10-ft	10	2	3	11
6062	Cable Tray, Splice Kit, Material	each	0	0	1	15
6063	Cable Tray, Splice Kit, Labor	each	0	0	1	8
6064	Cable Tray, Junction Kit, Material	each	0	1	1	10
6065	Cable Tray, Junction Kit, Labor	each	0	1	1	17
6066	Cable Tray, Mounting-Bolt Kit, Material	each	0	8	4	26
6067	Cable Tray, Mounting-Bolt Kit, Labor	each	0	8	4	26
6068	Cable Tray, Ceiling Kit, Material	each	0	26	2	3
6069	Cable Tray, Ceiling Kit, Labor	each	0	26	2	3
6070	Cable Tray, Wall Bracket Kit, Material	each	20	5	4	23

6071	Cable Tray, Wall Bracket Kit, Labor	each	20	5	4	23
6072	Cable Tray, Triangular Support Bracket Kit, Material	each	New	New	New	New
6073	Cable Tray, Triangular Support Bracket Kit, Labor	each	New	New	New	New
6074	Strut, 1-5/8” x 1-5/8” Galvanized Steel, Slotted, Material	foot	New	New	New	New
6075	Strut, 1-5/8” x 1-5/8” Galvanized Steel, Slotted, Labor	foot	New	New	New	New
6076	Cable Tray, Flexible 4 ¼” Wide, 8’ Long, Material	10-ft	0	69	3	0
6077	Cable Tray, Flexible 4 ¼” Wide, 8’ Long, Labor	10-ft	0	69	3	0
6078	Cable Tray, Wire Mesh Basket, 2"x 6"x 10', Material	10-ft	0	69	3	0
6079	Cable Tray, Wire Mesh Basket, 2"x 6"x 10', Labor	10-ft	0	69	3	0
6080	Cable Tray, Wire Mesh Basket, 2"x 12"x 10', Material	10-ft	0	69	3	0
6081	Cable Tray, Wire Mesh Basket, 2"x 12"x 10', Labor	10-ft	0	69	3	0
6082	Cable Tray, Wire Mesh Basket, 4"x 12"x 10', Material	10-ft	0	69	3	0
6083	Cable Tray, Wire Mesh Basket, 4"x 12"x 10', Labor	10-ft	0	69	3	0
6084	Cable Tray, Wire Mesh Basket, 4"x 18"x 10', Material	10-ft	0	69	3	0
6085	Cable Tray, Wire Mesh Basket, 4"x 18"x 10', Labor	10-ft	0	69	3	0
6086	Cable Tray, Wire Mesh Basket, 4"x 24"x 10', Material	10-ft	0	69	3	0
6087	Cable Tray, Wire Mesh Basket, 4"x 24"x 10', Labor	10-ft	0	69	3	0
*	**MISCELLANEOUS LABOR AND SERVICE UNITS**					
7001	Laborer	hr	10	327	8	34
7002	Splicer	hr	0	0	0	0
7003	Conduit Worker	hr	0	0	4	10
7004	Inside Cable Placer	hr	0	299	6	102
7005	Wire Technician	hr	23	596	54	76

7006	Fiber Technician	hr	0	24	1	1
7007	Abandoned Cable Removal	hr	New	New	New	New
7008	Engineer	hr	0	0	0	0
7009	Drafting	hr	0	0	0	0
7010	Clerical	hr	0	2	6	0
7011	Trouble Determination Fee, Normal Business Hours	hr	0	0	0	0
7012	Trouble Determination Fee, Normal Business Hours	hr	0	0	0	0
*	**MISCELLANEOUS UNITS**					
8001	Special Project Surcharge, Material (Not to exceed 50%)	%	0	1	0	2
8002	Special Project Surcharge, After Hours Labor	%	1	12	0	0

8.2 STATE REGION MAP



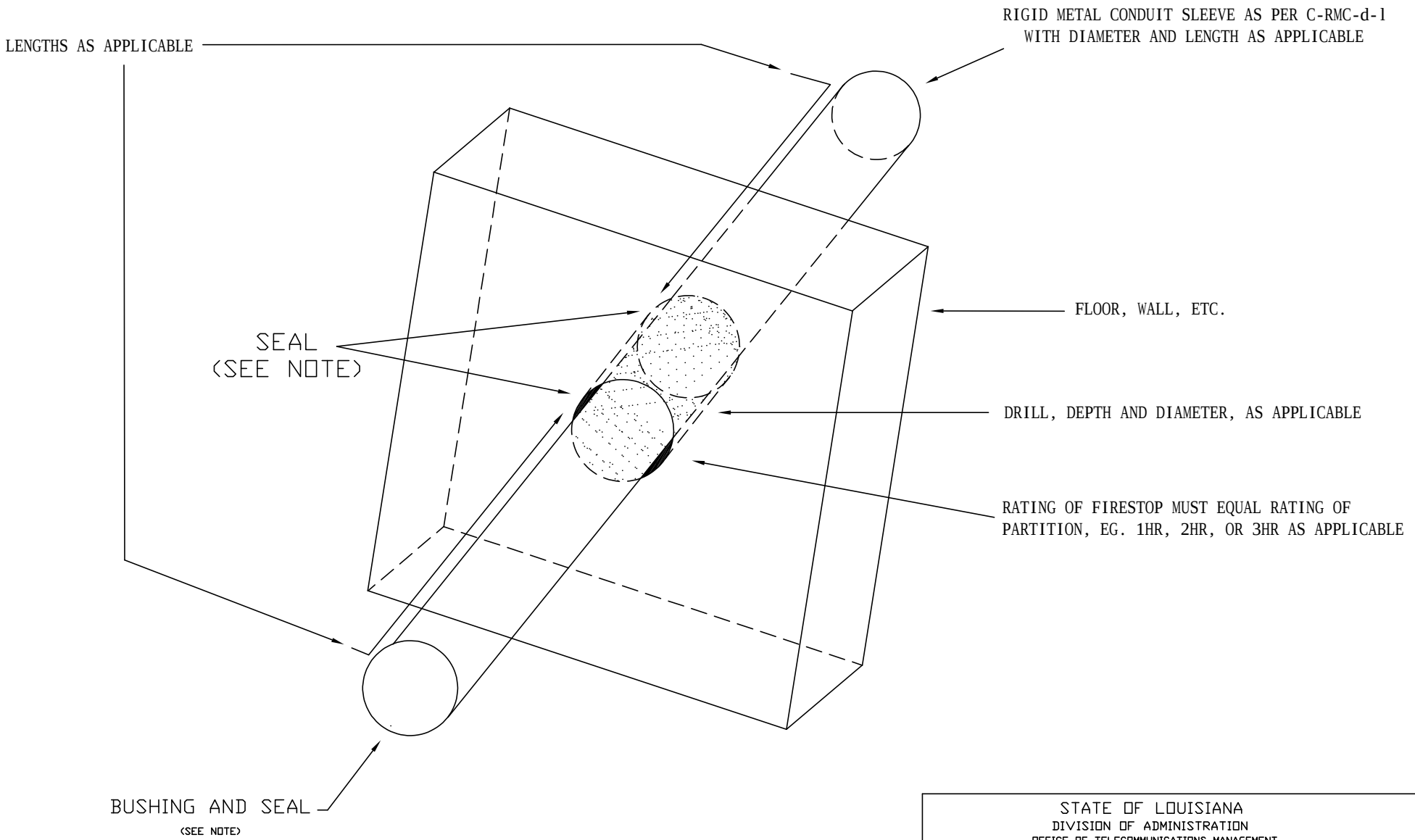
8.2.1 STATE REGION – PARISH LIST

OTM DEFINED REGIONS
OUTDOOR COMPLEX CABLE AND WIRE REGIONS
BY
PARISHES

REGION "1" **(NO)**	**REGION "2"** **(BTR)**	**REGION "3"** **(LAF & LC)**	**REGION "4"** **(ALX, SHV & MON)**
Assumption	Ascension	Acadia	Avoyelles
Jefferson	East Baton Rouge	Allen	Bienville
Lafourche	East Feliciana	Beauregard	Bossier
Orleans	Iberville	Calcasieu	Caddo
Plaquemines	Livingston	Cameron	Caldwell
St. Bernard	Pointe Coupee	Evangeline	Catahoula
St. Charles	St. Helena	Iberia	Claiborne
St. James	St. Tammany	Jeff Davis	Concordia
St. John the Baptist	Tangipahoa	Lafayette	DeSoto
Terrebonne	Washingston	St. Landry	East Carroll
	West Baton Rouge	St. Martin	Franklin
	West Feliciana	St. Mary	Grant
		Vermilion	Jackson
			LaSalle
			Lincoln
			Madison
			Morehouse
			Natchitoches
			Ouachita
			Rapides
			Red River
			Richland
			Sabine
			Tensas
			Union
			Vernon
			Webster
			West Carroll
			Winn

8.3 TECHNICAL DRAWINGS

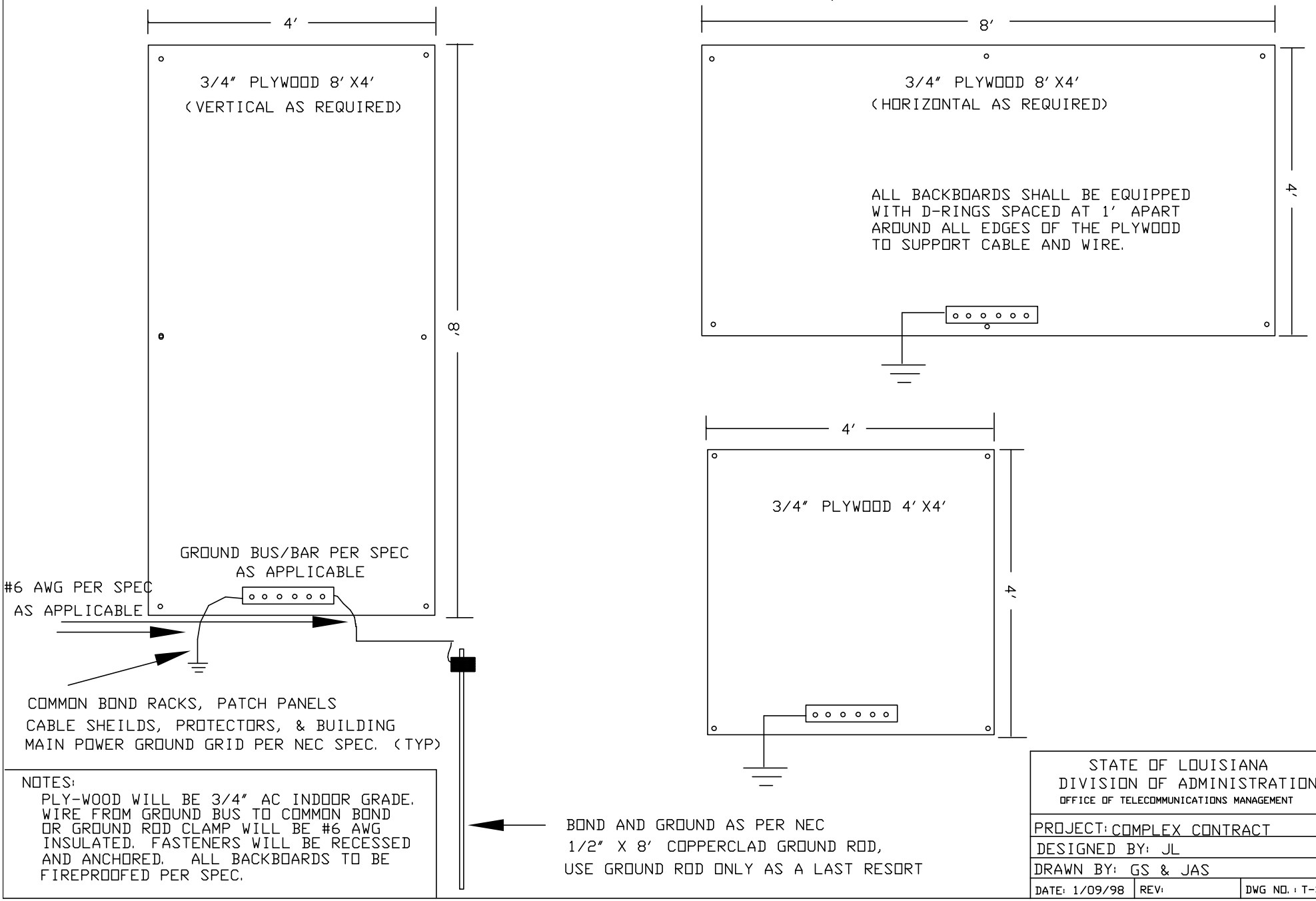
CORE, DRILL, & FIRESTOP



NOTE: CONDUIT SLEEVE SHALL BE SEALED WITH FIRESTOP MATERIAL AND METHODS COMPLYING WITH NEC AND STATE FIRE MARSHALL'S REQUIREMENTS.

STATE OF LOUISIANA DIVISION OF ADMINISTRATION OFFICE OF TELECOMMUNICATIONS MANAGEMENT		
PROJECT:	CABLE CONTRACTS	
DESIGNED BY:	OFFICE OF TELECOMMUNICATIONS MANAGEMENT	
DRAWN BY:	JDT	
DATE: 9-4-02	REV. NO.:	DWG. NO.: T- 2 . 1

TELEPHONE BACKBOARDS, TYPICAL

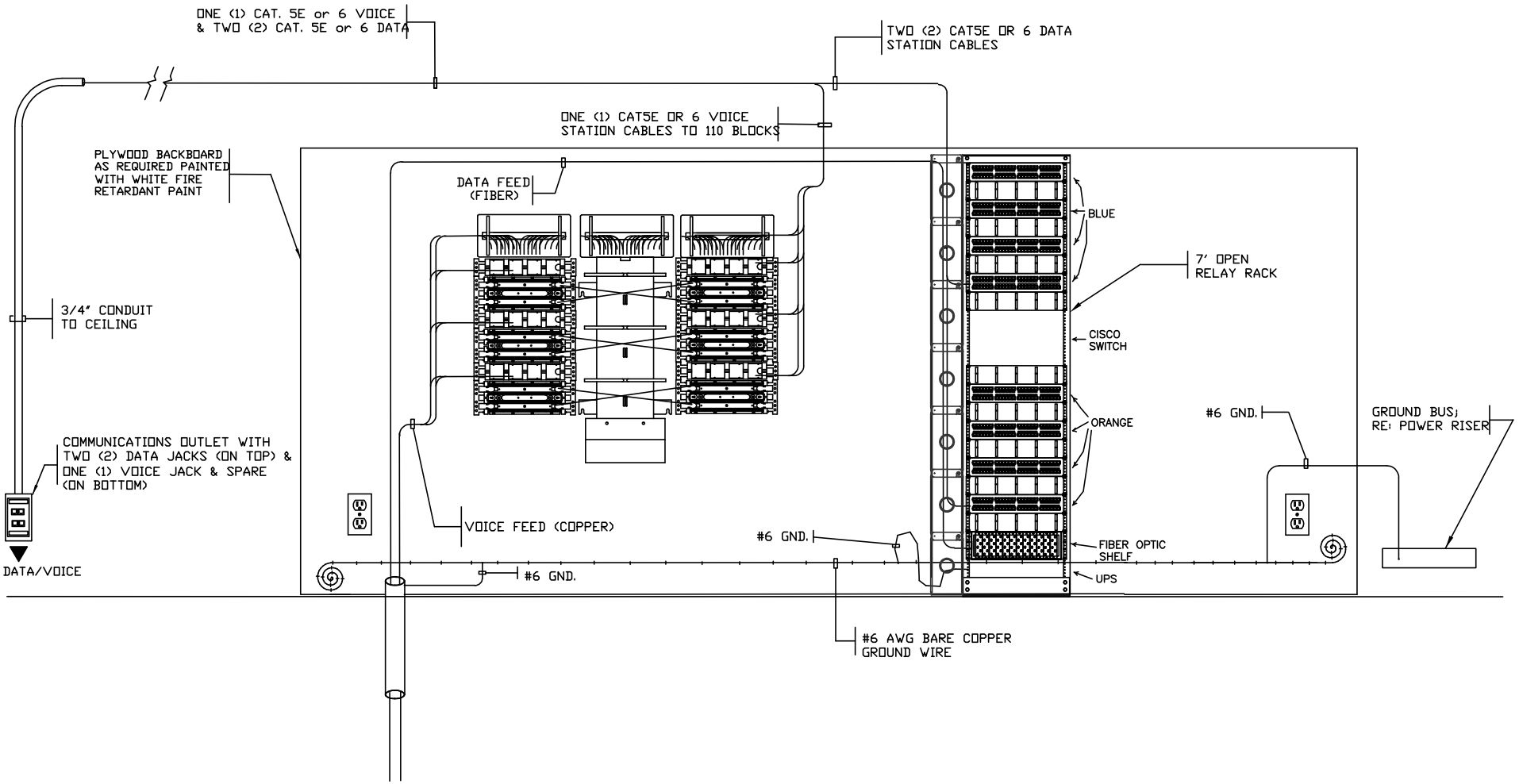


NOTES:
PLY-WOOD WILL BE 3/4" AC INDOOR GRADE. WIRE FROM GROUND BUS TO COMMON BOND OR GROUND ROD CLAMP WILL BE #6 AWG INSULATED. FASTENERS WILL BE RECESSED AND ANCHORED. ALL BACKBOARDS TO BE FIREPROOFED PER SPEC.

STATE OF LOUISIANA
DIVISION OF ADMINISTRATION
OFFICE OF TELECOMMUNICATIONS MANAGEMENT

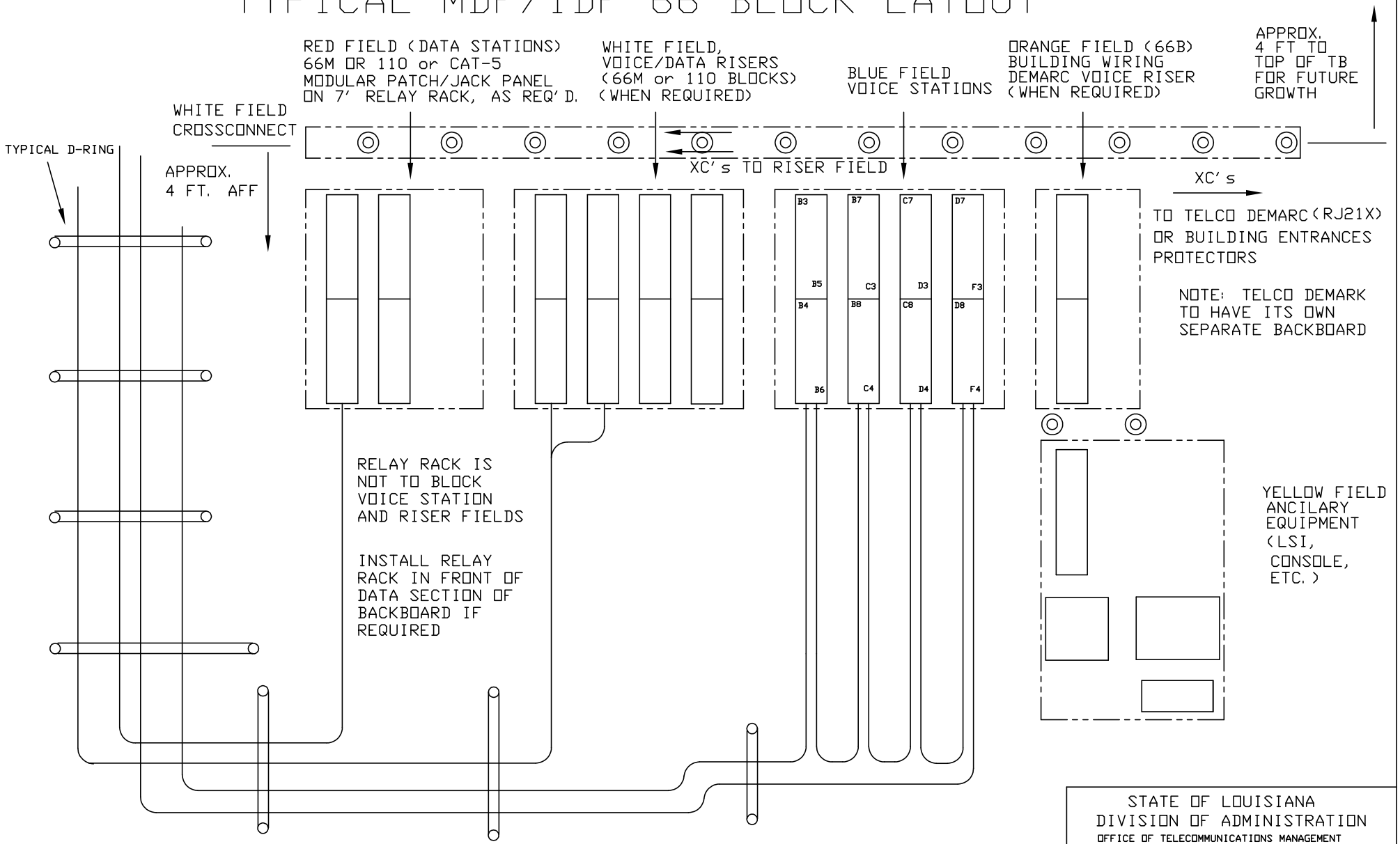
PROJECT: COMPLEX CONTRACT		
DESIGNED BY: JL		
DRAWN BY: GS & JAS		
DATE: 1/09/98	REV:	DWG NO.: T-3.1

MDF/IDF 110 BLOCK & RELAY RACK
EQUIPMENT ROOM LAYOUT
(TYPICAL)



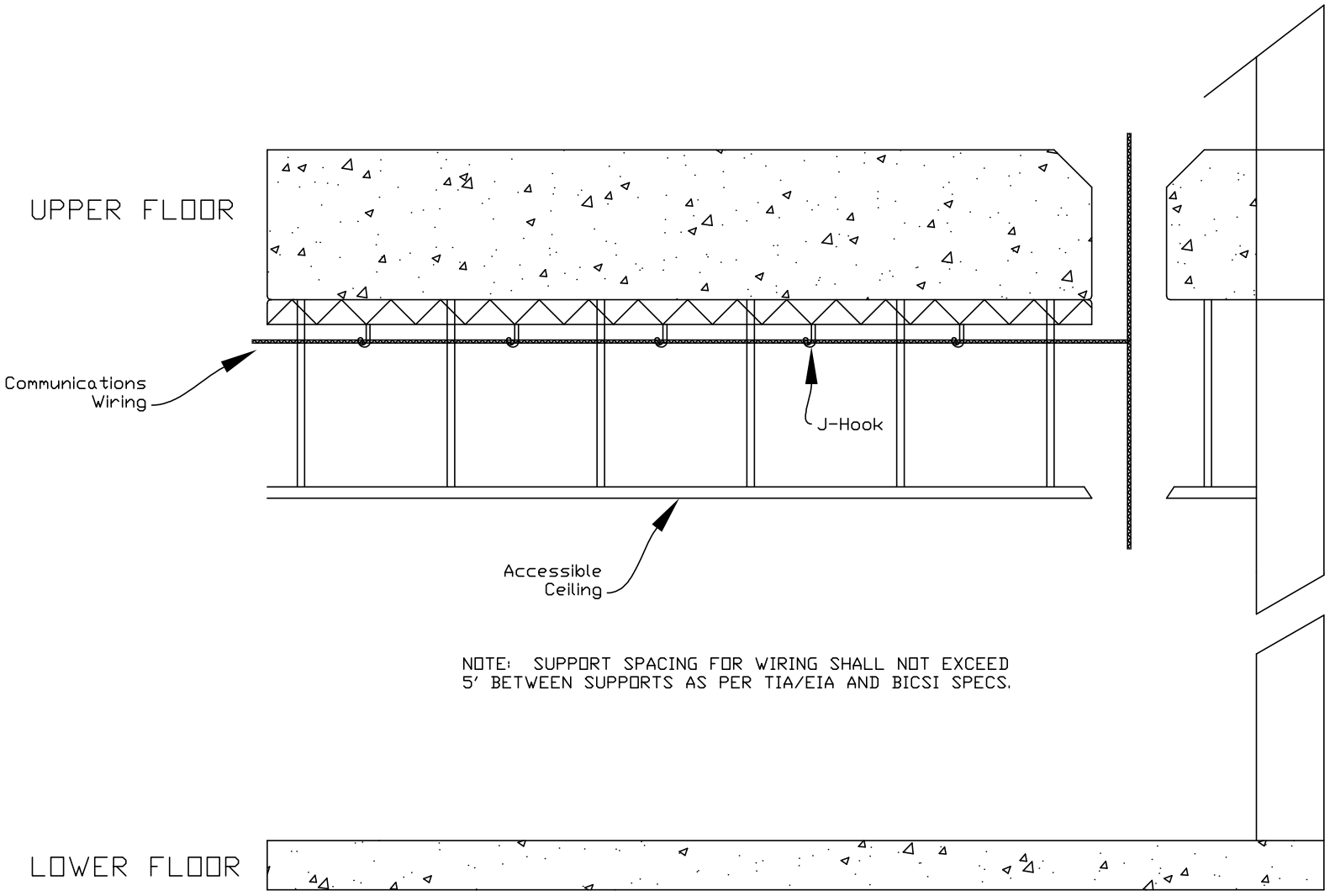
STATE OF LOUISIANA DIVISION OF ADMINISTRATION OFFICE OF TELECOMMUNICATIONS MANAGEMENT		
PROJECT:	CABLE CONTRACTS	
DESIGNED BY:	OFFICE OF TELECOMMUNICATIONS MANAGEMENT	
DRAWN BY:	SS	
DATE: 8-9-02	REV. NO.:	DWG. NO.: T- 3 . 2

TYPICAL MDF/IDF 66 BLOCK LAYOUT



STATE OF LOUISIANA DIVISION OF ADMINISTRATION OFFICE OF TELECOMMUNICATIONS MANAGEMENT		
PROJECT: COMPLEX CONTRACT		
DESIGNED BY: JL		
DRAWN BY: JL & PR & JAS		
DATE: 1/09/98	REV:	DWG NO.: T-3.3

HORIZONTAL WIRING



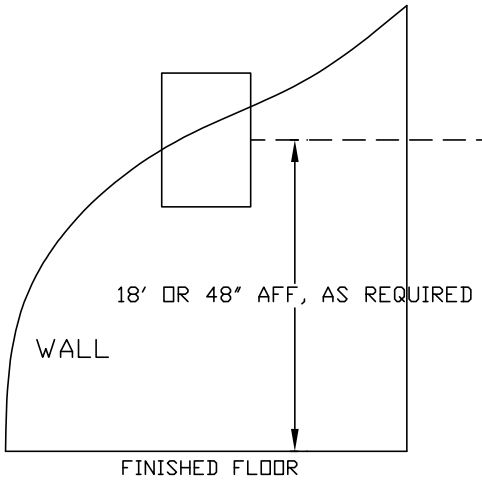
NOTE: SUPPORT SPACING FOR WIRING SHALL NOT EXCEED 5' BETWEEN SUPPORTS AS PER TIA/EIA AND BICSI SPECS.

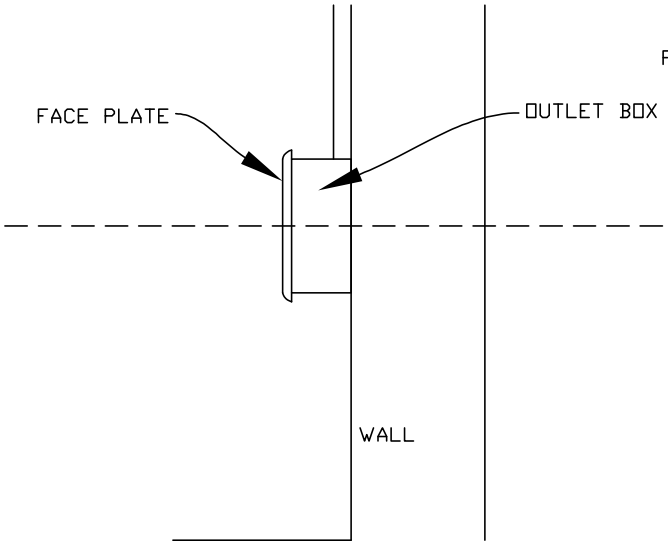
NOTE:
COMMUNICATIONS WIRING SHALL BE SUPPORTED FROM BUILDING JOINTS AND/OR FLOOR CONSTRUCTION, NOT ON CEILING PANELS/FRAME. WIRING SHALL BE PLACE AS TO AVOID TOUCHING OR IN PROXIMITY TO EMI SOURCES SUCH AS LIGHTING BALLASTS, TRANSFORMERS, MOTORS, ETC.

STATE OF LOUISIANA DIVISION OF ADMINISTRATION OFFICE OF TELECOMMUNICATIONS MANAGEMENT		
PROJECT:	CABLE CONTRACTS	
DESIGNED BY:	OFFICE OF TELECOMMUNICATIONS MANAGEMENT	
DRAWN BY:	JDT	
DATE: 9-12-03	REV. NO.:	DWG. NO.: T- 4 . 1

TELEPHONE & COMPUTER OUTLET MOUNTING

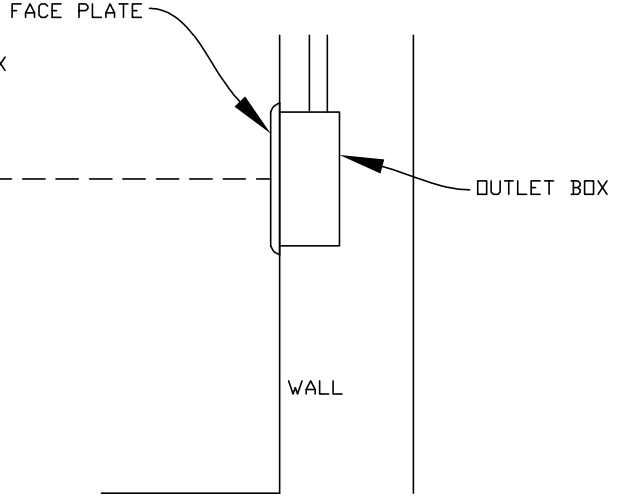
OUTLET BOX
TELECOMMUNICATIONS OUTLET
COMMUNICATIONS OUTLET INSERT
FACEPLATE



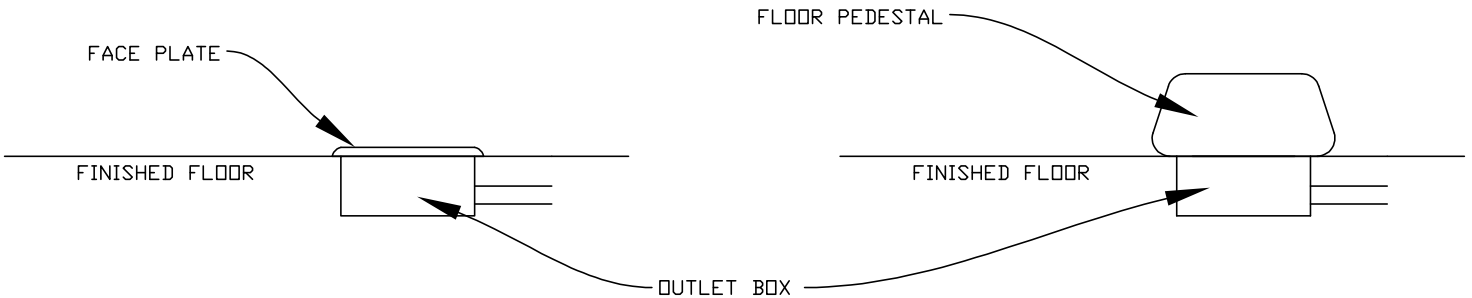


WORK AREA
SURFACE MOUNTING

CONDUIT TO ACCESSIBLE
CEILING, CONDUIT, AS
REQUIRED



WORK AREA
RECESSED MOUNTING

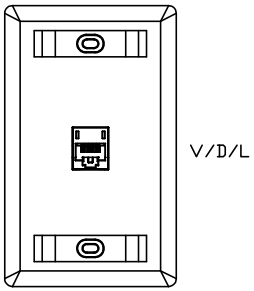


WORK AREA
FLOOR MOUNTING

STATE OF LOUISIANA DIVISION OF ADMINISTRATION OFFICE OF TELECOMMUNICATIONS MANAGEMENT		
PROJECT:	CABLE CONTRACTS	
DESIGNED BY:	OFFICE OF TELECOMMUNICATIONS MANAGEMENT	
DRAWN BY:	JDT	
DATE: 9-12-03	REV. NO.:	DWG. NO.: T- 4 . 2

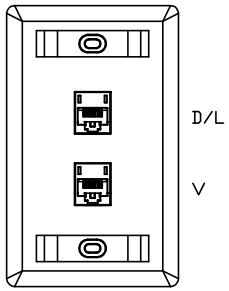
TYPES OF JACK/CONNECTOR CONFIGURATIONS

SINGLE



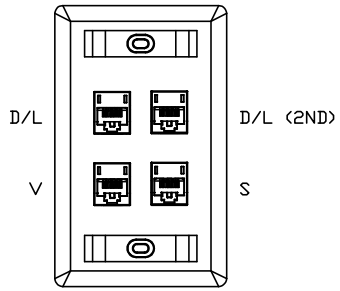
ONE (1) MODULAR
OR
ONE (1) COAX/FO/RF/CATV

DUAL



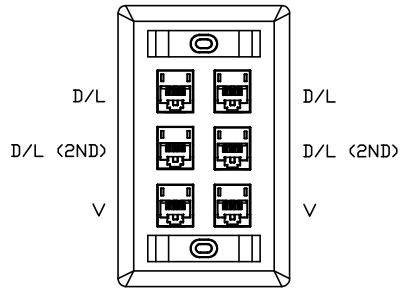
TWO (2) MODULAR
OR
ONE (1) MODULAR
ONE (1) COAX/FO/RF/CATV

QUAD



FOUR (4) MODULAR
OR
ASSORTED:
MODULAR/COAX/FO/RF/CATV/BLANK

SIX

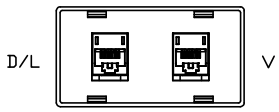


SIX (6) MODUALR

ASSORTED:
MODULAR/COAX/FO/RF/CATV/BLANK

DUAL

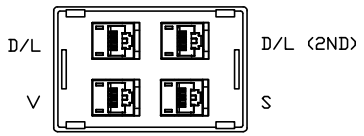
MODULAR
FURNITURE



ONE (1) MODULAR
OR
ONE (1) COAX/FO/RF/CATV

QUAD

MODULAR
FURNITURE



TWO (2) MODULAR
OR
ASSORTED:
MODULAR/COAX/FO/RF/CATV/BLANK

V - VOICE
D - DATA
L - LAN
S - SPARE OR BLANK (FUTURE)

* SPARE/BLANK PORT CAN BE MODULAR, DATA, COAX, FIBER, CATV, OR RF CONNECTORS.

STATE OF LOUISIANA DIVISION OF ADMINISTRATION OFFICE OF TELECOMMUNICATIONS MANAGEMENT		
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DATE: 9-12-03	REV. NO.:	DWG. NO.: T- 4 . 3

8.4 TEST FORMS

Proper Termination Test Form

Date: _____ Location _____ Instrument _____

Time: _____ Tech #1 _____ Tech #2 _____

Binder Group

_____ - _____

Pair		Continuity	Short	Polarity	Split	Ground	Open	AC/DC	Where was trouble found & fixed
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

Loop Resistance Test Form

Date: _____ Location _____ Instrument _____

Time: _____ Tech _____ Distance A-B _____

Temp: _____

	Binder Groups			
Pair	-	-	-	-
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

Conductor Insulation Resistance Test Form

Date: _____ Location _____ Instrument _____

Time: _____ Point A-B _____ Tech _____

	Binder Groups _____ - _____		Binder Groups _____ - _____	
Pair	Tip	Ring	Tip	Ring
1	WHT	BL	WHT	BL
2	WHT	ORG	WHT	ORG
3	WHT	GRN	WHT	GRN
4	WHT	BRN	WHT	BRN
5	WHT	SLT	WHT	SLT
6	RED	BL	RED	BL
7	RED	ORG	RED	ORG
8	RED	GRN	RED	GRN
9	RED	BRN	RED	BRN
10	RED	SLT	RED	SLT
11	BLK	BL	BLK	BL
12	BLK	ORG	BLK	ORG
13	BLK	GRN	BLK	GRN
14	BLK	BRN	BLK	BRN
15	BLK	SLT	BLK	SLT
16	YEL	BL	YEL	BL
17	YEL	ORG	YEL	ORG
18	YEL	GRN	YEL	GRN
19	YEL	BRN	YEL	BRN
20	YEL	SLT	YEL	SLT
21	VIO	BL	VIO	BL
22	VIO	ORG	VIO	ORG
23	VIO	GRN	VIO	GRN
24	VIO	BRN	VIO	BRN
25	VIO	SLT	VIO	SLT

Sheath Insulation Resistance Test Form

Date: _____

Time: _____

Temp: _____

Location _____ Instrument _____

Tech #1 _____ Tech #2 _____

Local Weather Conditions: _____

Description A-B _____ to _____

Distance A-B _____ ft. Actual MEG OHMS _____ ohms

MEG OHM criteria by formula _____

Description B-C _____ to _____

Distance B-C _____ ft. Actual MEG OHMS _____ ohms

MEG OHM criteria by formula _____

Description C-D _____ to _____

Distance C-D _____ ft. Actual MEG OHMS _____ ohms

MEG OHM criteria by formula _____

Description D-E _____ to _____

Distance D-E _____ ft. Actual MEG OHMS _____ ohms

MEG OHM criteria by formula _____

Description E-F _____ to _____

Distance E-F _____ ft. Actual MEG OHMS _____ ohms

MEG OHM criteria by formula _____

Description F-G _____ to _____

Distance F-G _____ ft. Actual MEG OHMS _____ ohms

MEG OHM criteria by formula _____

Coaxial Cable Proper Termination Test Form

Location: _____

Tech #1 _____

Date: _____

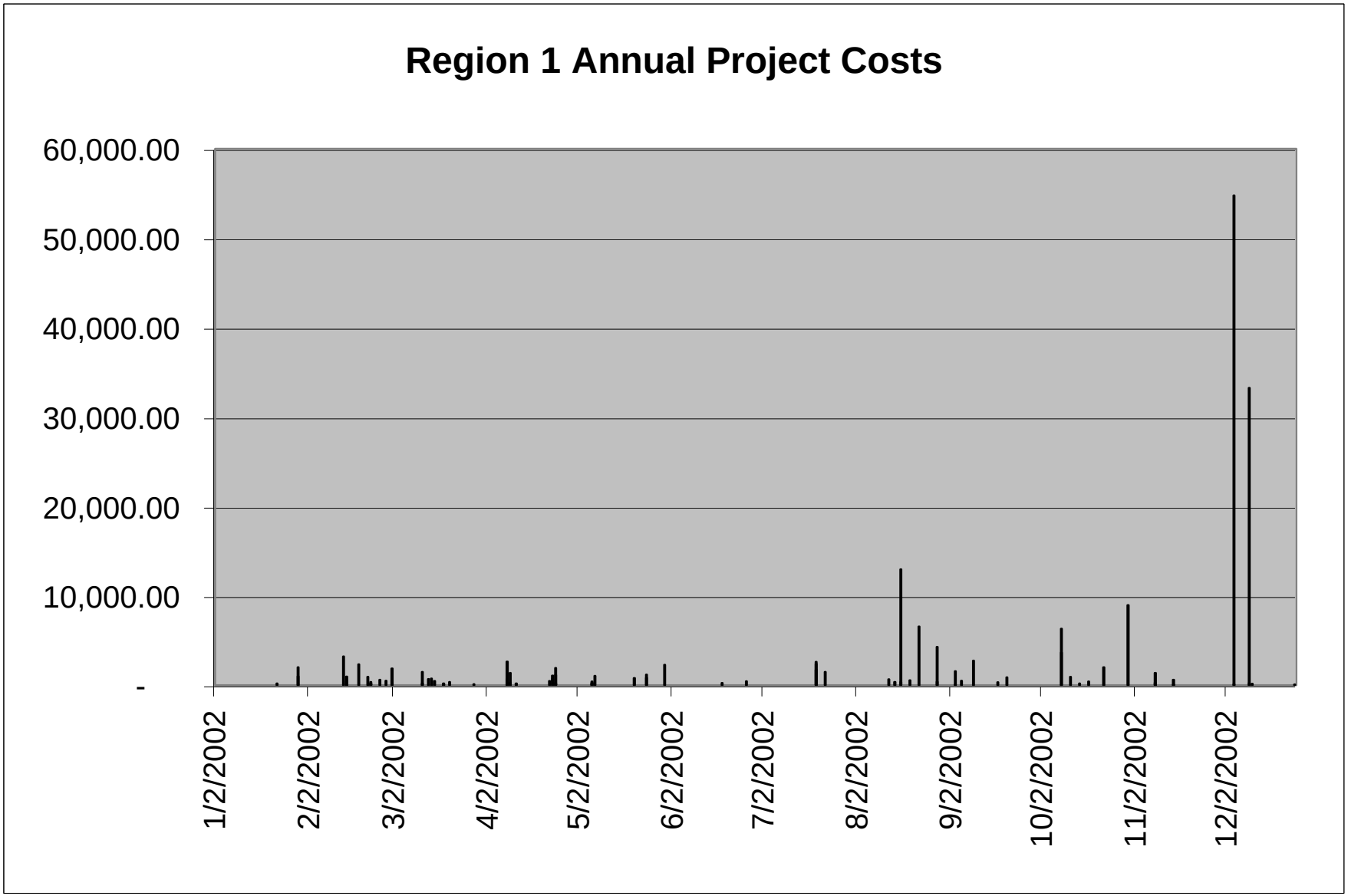
Tech #2 _____

Time: _____

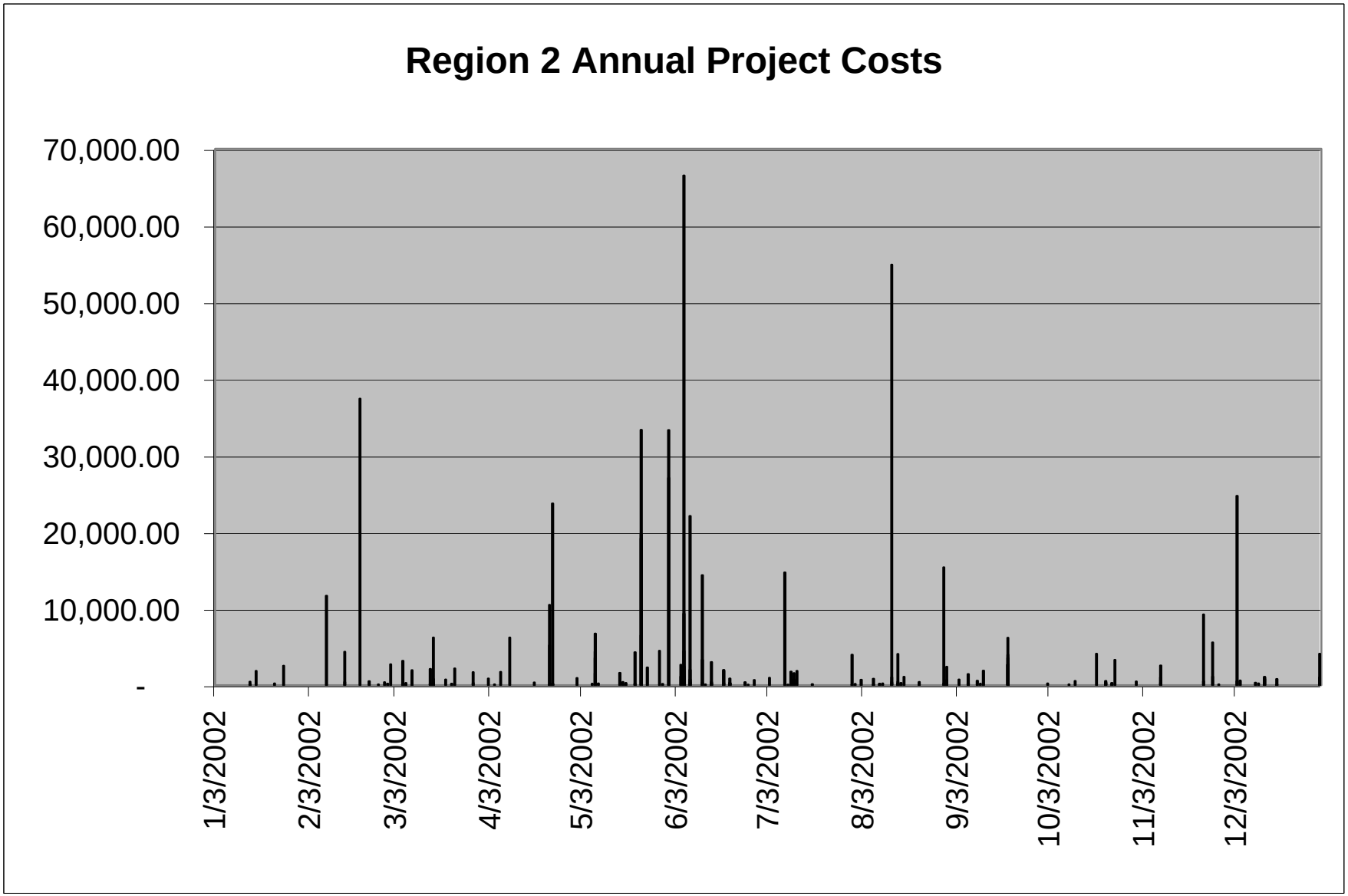
Test Instrument: _____

Run #	Continuity	Short	Ground	Open	Run Length

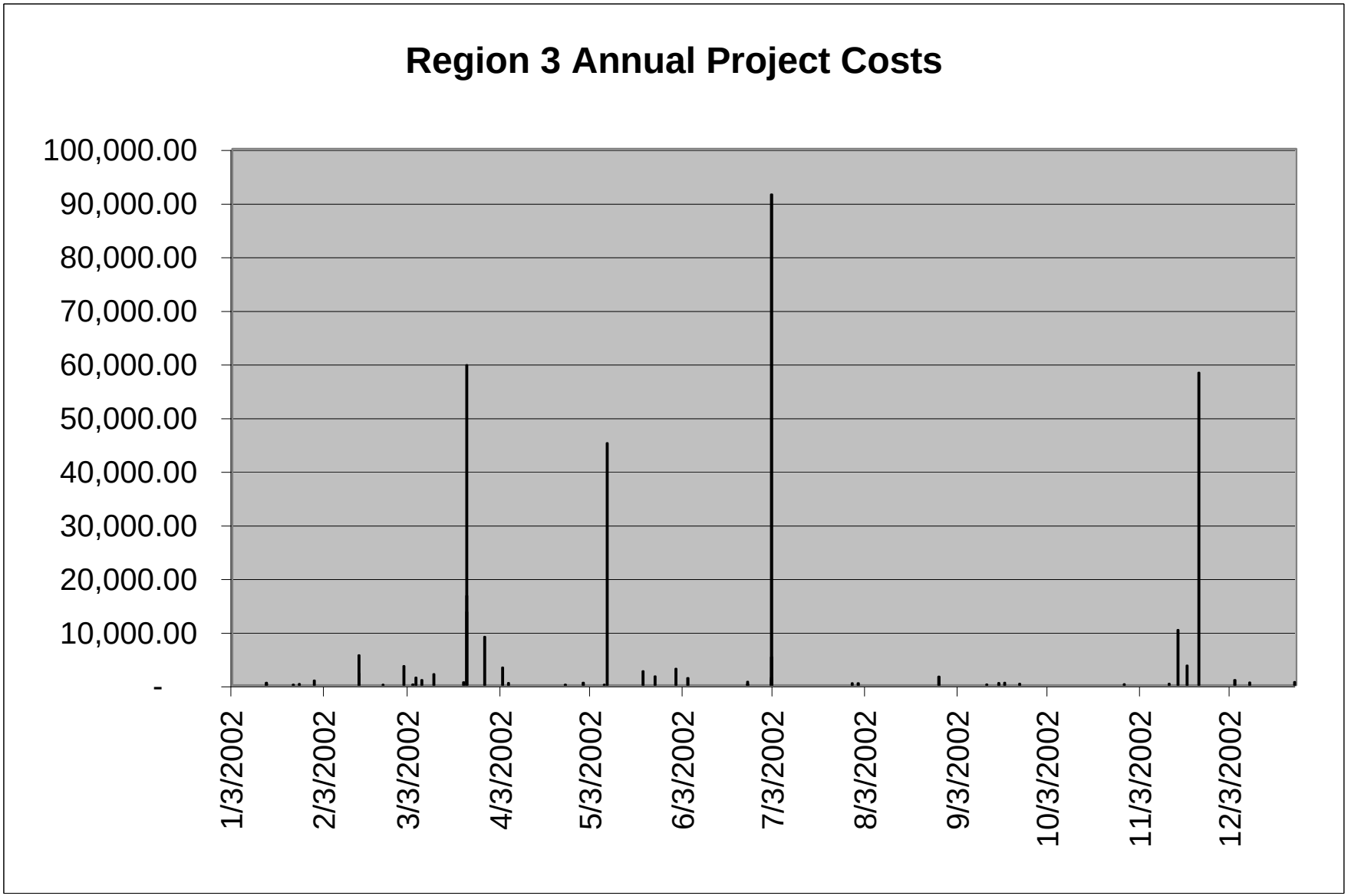
8.5 NUMBER AND COST OF PROJECTS PER REGION



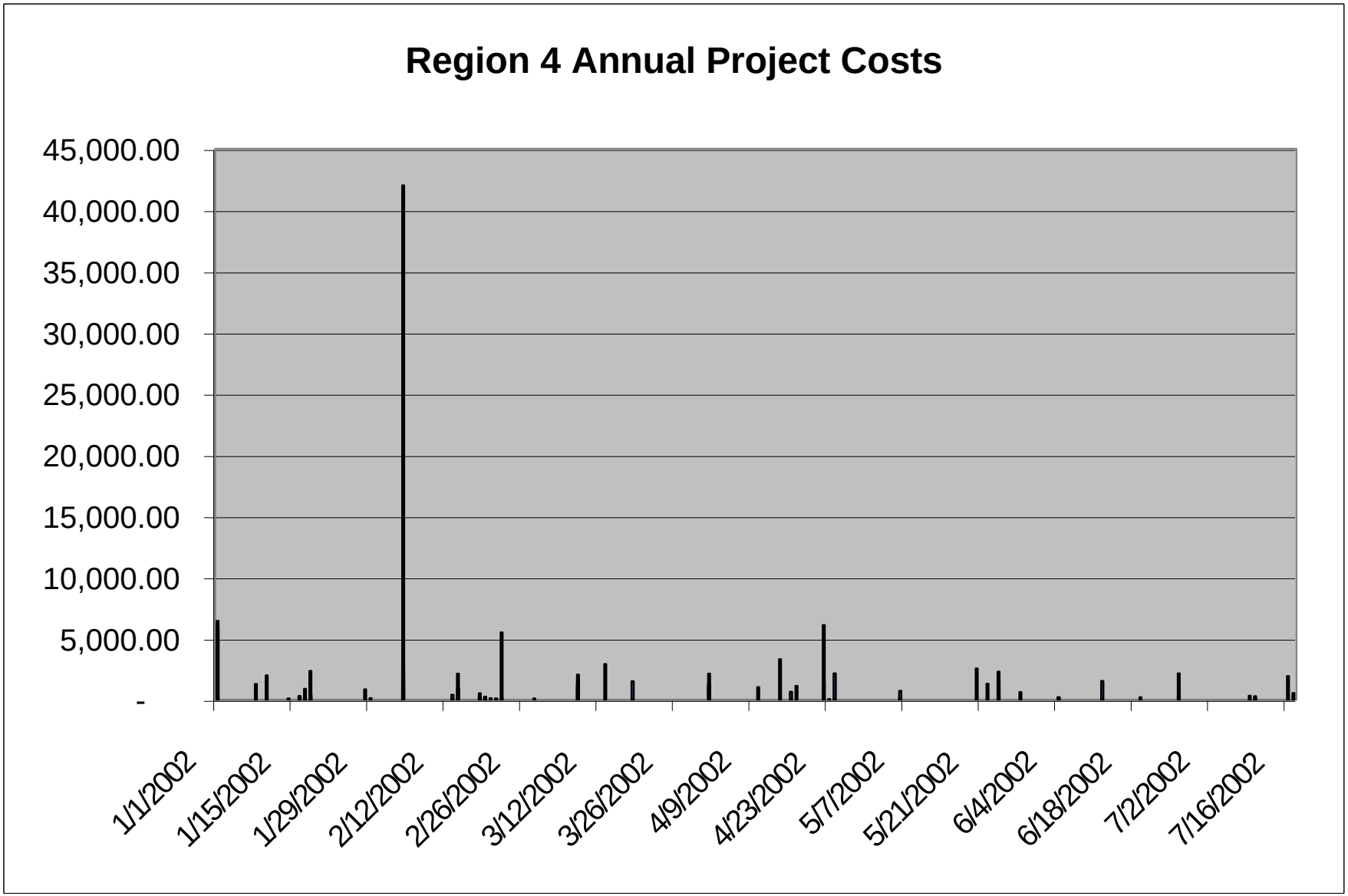
Total # of Projects = 88 **Total Cost = $191561.17** **Average Cost = $2176.83**



Total # of Projects = 196 **Total Cost = $658589** **Average Cost = $3360.15**



Total # of Projects = 59 **Total Cost = $356633.99** **Average Cost = $6044.64**



Total # of Projects = 131 **Total Cost = $322371.30** **Average Cost = $2460.85**